Measurement of RF Emissions from a Dualband Wireless Amplifier, Model No. 8811960A

For	:	3XA Wireless Inc. Crystal Lake, IL
P.O. No.	:	3XA031507
Date Received	:	March 20, 2007
Date Tested	:	March 20 through March 29., 2007
Test Personnel	:	Richard E. King EMC Engineer
Specification	:	FCC CFR Title 47 Part 24; RSS-133 - 2 GHz Personal Communications Services Issue 3 June 2005

Test Report By : Richard E. King

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Witnessed by :

Phil Aseltine
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REVISION HISTORY

REVISION	DATE	DESCRIPTION
—	04/27/07	Initial release

Measurement of RF Emissions from a Model No. 8811960A, Dualband Wireless Amplifier

1.0 INTRODUCTION:

1.1 DESCRIPTION OF TEST ITEM: This document presents the results of the series of radio interference measurements performed on a model 8811960A Dualband Wireless Amplifier Serial Number 000001, (hereinafter referred to as the test item). The tests were performed for 3XA Wireless Inc. of Crystal Lake, IL.

The test item is a Dualband Wireless Amplifier that operates in the PCS bands, 1930 MHz through 1990 MHz. The test item has a rated gain of 50dB for the PCS band.

The test item is designed to operate in the following frequency blocks in the PCS band:

Block	Downlink Frequency (MHz)
A	1930-1945
D	1945-1950
B	1950-1965
E	1965-1970
F	1970-1975
C	1975-1990

1.2 PURPOSE: The test series was performed to determine if the test item meets the technical requirements of the FCC Part 24 for broadband PCS.

1.3 DEVIATIONS, ADDITIONS AND EXCLUSIONS: There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4 APPLICABLE DOCUMENTS: The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 24, dated 1 October 2006
- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 2, dated 1 October 2006
- ANSI C63.4-2001, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"
- RSS-133 - 2 GHz Personal Communications Services Issue 3 June 2005
- TIA-603-C-2004, “Land Mobile FM or PM – Communications Equipment – Measurement and Performance Standards”

1.5 SUBCONTRACTOR IDENTIFICATION: This series of tests was performed by Elite Electronic Engineering Incorporated, of Downers Grove, Illinois. The laboratory is accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 100278-0.

1.6 LABORATORY CONDITIONS:: The temperature at the time of the test was 22°C and the relative humidity was 21%.

2.0 TEST ITEM SETUP AND OPERATION:

2.1 POWER INPUT: The test item obtained 12VDC from a Power Sonic M/N: PS-1250 F1 rechargeable battery.

2.2 GROUNDING: The test item was ungrounded during the tests.

2.3 PERIPHERAL EQUIPMENT: The following peripheral equipment was submitted with the test item:

ITEM	DESCRIPTION
HP Signal Generator	M/N E4432B, S/N VS39440973 The output of the signal generator was connected to the test item through a 1 foot long coaxial cable.

2.4 MODULATION: The test signal was modulated with three different representative types of modulations: (1) Amps (FM) 30kHz modulation, (2) Digital I/Q modulation - CDMA 1.23 MHz, and (3) Digital modulation - GSM 300kHz. (4) Digital I/Q modulation - TDMA 30kHz. The input signals were supplied from an HP M/N E4432B Signal Generator.

The RF Power Output, the Occupied Bandwidth, the Spurious Emissions at Antenna Terminal, and the Field Strength of Spurious Emissions tests were performed with AMPS, CDMA, GSM, and TDMA modulated input signals.

2.5 FREQUENCY SELECTION: For the RF Power Output test, the Occupied Bandwidth test, and the Spurious Emissions at Antenna Terminal test, two test frequencies for the downlink, one at the low edge of Block A and one at the high edge of Block C, were selected. The frequencies were one channel spacing from the low or high edge of the frequency range edge.

For the Field Strength of Spurious Emissions test, three test frequencies one near the middle of block A, one near the middle of block B, and one near the middle of block C, were selected.

The specified channel spacing used for each modulation type is shown below:

Modulation	Channel Spacing
AMPS	30kHz
CDMA	1.23MHz
GSM	300kHz
TDMA	30kHz

The specific test frequencies are designated as follows:

Modulation Type	Low Edge Frequency MHz	High Edge Frequency MHz	Low Frequency MHz	Middle Frequency MHz	High Frequency MHz
Downlink RF Power Output test, Occupied Bandwidth test, Spurious Emissions at Antenna Terminal test					
AMPS	1930.03	1989.97			
CDMA	1931.23	1988.77			
GSM	1930.3	1989.7			
TDMA	1930.03	1989.97			
Downlink, Field Strength of Spurious Emissions test					
AMPS			1935	1955	1985
CDMA			1935	1955	1985
GSM			1935	1955	1985
TDMA			1935	1955	1985

2.6 RF POWER OUTPUT: The input levels were adjusted to reach the rated output levels shown below:

Modulation	Rated Power	
	Downlink (dBm)	Downlink (Watts)
AMPS	12	0.016
CDMA	12	0.016
GSM	12	0.016
TDMA	12	0.016

3.0 TEST EQUIPMENT:

3.1 TEST EQUIPMENT LIST: A list of the test equipment used can be found on Table I. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

3.2 CALIBRATION TRACEABILITY: Test equipment is maintained and calibrated on a regular basis. All calibrations are traceable to the National Institute of Standards and Technology (NIST).

4.0 REQUIREMENTS, PROCEDURES AND RESULTS:

4.1 RF POWER OUTPUT MEASUREMENTS:

4.1.1 **REQUIREMENTS:** In accordance with paragraph 24.323, mobile/portable stations are limited to 2 Watts e.i.r.p. peak power and the equipment must employ means to limit the power of the minimum necessary for successful communications.

4.1.2 **PROCEDURES:** The test item was adjusted for the rated gain. The test item was configured to measure the output for the downlink path.

(a) The input signal was set to 1930.03MHz.
(b) The input signal was AMPS modulated.
(c) The spectrum analyzer was connected to the output of the test item and the output of the test item was monitored.
(d) The amplitude of the input signal was adjusted until the rated output level was achieved. The output power level was measured and recorded. The input signal level was also recorded.
(e) Steps (b) through (d) were repeated separately for each frequency and modulation listed in paragraph 2.5 above.

4.1.3 **RESULTS:** The output power measurements are presented on data page 14. The power outputs measured for the downlink path were 0.016 watts for all frequencies and modulations listed in paragraph 2.5 above. The remainder of the tests were performed at these power levels. The power output complies with the FCC requirements.

The EIRP limit does not apply to the power output alone, but the combination of the power output and the antenna. Compliance to the power output will be based on the system configuration. Therefore, the EIRP requirement cannot be directly applied to the test item.

4.2 OCCUPIED BANDWIDTH MEASUREMENTS:

4.2.1 **REQUIREMENTS:** In accordance with Paragraph 24.238(a), on any frequency outside the authorized frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P)dB. For a rated power level of 0.016 watts downlink, the emissions outside of the emission bandwidth shall be attenuated at least 25dB downlink below the transmitter power.

In the 1MHz bands immediately outside and adjacent to the frequency range a resolution of at least one percent of the emission bandwidth shall be used. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency where the emissions are 25dB down for downlink

frequencies.

4.2.2 **PROCEDURES:** The test was performed using each of the modulation types listed in paragraph 2.5 (AMPS, CDMA, GSM, TDMA).

(a) The input signal was set separately to 1930.03MHz and 1989.97MHz. The input signal level was adjusted to provide the rated level at the test item output. The reference level was recorded.
(b) The input signal was AMPS modulated.
(c) A spectrum analyzer was connected to the output of the test item. With a bandwidth of the spectrum analyzer set to 300 Hz, the output of the test item was measured and recorded.
(d) The input signal from the signal generator was measured with the spectrum analyzer and recorded over the same frequency range.
(e) The modulation was changed to CDMA and steps (c) and (d) were repeated separately with the input signal set to 1931.23MHz, and 1988.77MHz. The bandwidth of the spectrum analyzer was set to 30kHz.
(f) The modulation was changed to GSM and steps (c) and (d) were repeated separately with the input signal set to 1930.3MHz, and 1989.7MHz. The bandwidth of the spectrum analyzer was set to 30kHz.
(g) The modulation was changed to TDMA and steps (c) and (d) were repeated separately with the input signal set to 1930.03MHz and 1989.97MHz. The bandwidth of the spectrum analyzer was set to 300Hz.

4.2.3 **RESULTS:** The plots of the occupied bandwidth measured with all modulations listed above in paragraph 2.4 are presented on data pages 15 through 38. The limits, shown on the plots, are referenced to the power measured from the unmodulated carrier.

As can be seen from the data, the test item output met the occupied bandwidth requirements with the AMPS, CDMA, GSM and TDMA modulations of the carrier. The sideband emissions measured at the test item output were similar to the sideband emissions measured from the input signals.

4.3 SPURIOUS EMISSIONS AT ANTENNA TERMINAL:

4.3.1 **REQUIREMENTS:** This test determines whether the test item produces excessive spurious emissions. In accordance with Paragraph FCC 24.238, the spurious emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P)dB. FCC requirements apply only to frequencies outside the authorized frequency block. For the downlink frequencies 0.016 W, the spurious emissions shall be attenuated by a minimum of 25dB. This requirement translates to a limit of -13dBm. The peak power of the emissions shall

be measured at the antenna terminal from 30MHz up to the 10th harmonic of the fundamental frequency.

4.3.2 **PROCEDURES:** In general, this test will measure spurious emissions at the antenna terminals. The test was performed using each of the modulation types listed in paragraph 2.4 (AMPS, CDMA, GSM, TDMA).

(a) The input signal was set to 1930.03 MHz. The input signal level was adjusted to provide the rated level at the test item output.
(b) The input signal was AMPS modulated.
(c) A spectrum analyzer was connected to the output of the test item. The frequency span was adjusted to cover 30 MHz up to 1 GHz. With a bandwidth of the spectrum analyzer set to 100 kHz, the output of the test item was measured and recorded.
(d) The frequency span was adjusted to cover 1 GHz up to 20GHz. With a bandwidth of the spectrum analyzer set to 1 MHz, the output of the test item was measured and recorded
(e) Steps (c) through (d) were repeated with the input signal set to 1989.97MHz. The input signal was adjusted to provide the rated level at the test item output.
(f) Steps (c) through (d) were repeated with the input signal set to 1931.23MHz. The input signal was CDMA modulated and adjusted to provide the rated level at the test item output.
(g) Steps (c) through (d) were repeated with the input signal set to 1988.77MHz. The input signal was CDMA modulated and adjusted to provide the rated level at the test item output.
(h) Steps (c) through (d) were repeated with the input signal set to 1930.3MHz. The input signal was GSM modulated and adjusted to provide the rated level at the test item output.
(i) Steps (c) through (d) were repeated with the input signal set to 1989.7MHz. The input signal was GSM modulated and adjusted to provide the rated level at the test item output.
(j) Steps (c) through (d) were repeated with the input signal set to 1930.03MHz. The input signal was TDMA modulated and adjusted to provide the rated level at the test item output.
(k) Steps (c) through (d) were repeated with the input signal set to 1989.97MHz. The input signal was TDMA modulated and adjusted to provide the rated level at the test item output.

4.3.3 **RESULTS:** The plots of the antenna conducted output measurements are presented on data pages 39 through 54. As can be seen from the data, the test item did not produce spurious emissions in excess of the -13 dBm limit.

4.4 FIELD STRENGTH OF SPURIOUS EMISSIONS:

4.4.1 PRELIMINARY RADIATED MEASUREMENTS:

4.4.1.1**REQUIREMENTS:** Because emission levels in the open field may be masked by interference from sources other than the test item, preliminary radiated measurements are first performed in the low ambient environment of a shielded enclosure. The radiated emissions from the test item were first measured using peak detection. This data was then automatically plotted

4.4.1.2**PROCEDURES:** All preliminary tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4 2001 for site attenuation.

The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

The test was performed using each of the modulation types listed in paragraph 2.5.

(a) The preliminary measurements were performed with the test item operating separately with an input signal of 1935MHz with CW modulation. The broadband measuring antennas were positioned at a 3 meter distance from the test item. The frequency range from 30MHz to 18GHz was investigated. The readings were taken with a peak detector function and recorded.
(b) Step (a) was repeated with an input signal changed to 1955MHz.
(c) Step (a) was repeated with an input signal changed to 1985MHz.

4.4.1.3**RESULTS**: The preliminary plots are presented on data pages 55 through 67. Factors for the antennas and cables were added to the data before it was plotted. This data is only presented for a reference, and is not used as official data. All significant radiated emissions were subsequently measured at an open field test site.

4.4.2 **FINAL RADIATED EMISSIONS:**

4.4.2.1 **REQUIREMENTS:** In accordance with paragraph 24.238, on any frequency twice or more than twice the fundamental frequency, the emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P)dB. This requirement translates to a minimum attenuation of 25dB for the downlink frequencies. The peak power of the emissions shall be measured from 30MHz up to the 10th harmonic of the fundamental frequency.

4.4.2.2 **PROCEDURES**: Final open field measurements were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4 2001 for site attenuation.

The final open field emission test procedure is as follows:

a) The test item was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna.

b) The antenna output of the test item was terminated in 50 ohms for the tests.

c) A double ridged waveguide antenna was placed on an adjustable height antenna mast 3 meters from the test item for emission measurements.

d) Detected emissions were maximized at each frequency by rotating the test item and adjusting the receive antenna height and polarization.

e) The maximum meter reading was recorded. Measurement BW was 1 MHz and Video of 3MHz. Peak readings were recorded. No averaging methods or corrections were applied.

f) Measurements were performed with the input signal set to CW modulation.

g) Measurements were performed separately at each frequency used during the preliminary measurements.

The equivalent power into a dipole antenna was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power another tuned dipole antenna or double ridged waveguide antenna was set in place of the test item and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was corrected to compensate for cable loss, as required, and when the ridged waveguide antenna was used increased by the difference in gain between the dipole and the waveguide antenna.

4.4.2.3 **RESULTS OF OPEN FIELD RADIATED TEST:** The final open field radiated levels are presented on data pages 68 through 70. The radiated emissions were measured through the 10th harmonic. All emissions measured from the test item were within the specification limits.

5.0 CONCLUSION:

It was found that the 3XA Wireless Inc. model 8811960A, Serial No. 000001, Dualband

Wireless Amplifier, complies with the RF Power Output, the Occupied Bandwidth, the Spurious Emissions at Antenna Terminal, and the Field Strength of Spurious Emissions requirements of the FCC Part 24 and RSS 133 Issue 3 June 2005.

6.0 CERTIFICATION:

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specification. The data presented in this test report pertains only to the test item at the test date as operated by 3XA Wireless Inc. personnel. Any electrical or mechanical modification made to the test item subsequent to the specified test date will serve to invalidate the data and void this certification.

7.0 ENDORSEMENT DISCLAIMER:

This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

TABLE I: TEST EQUIPMENT LIST

Equipment Type: ACCESSORIES, MISCELLANEOUS								
XZG2	ATTENUATOR/SWITCH DRIVER	HEWLETT PACKARD	11713A	2223A01751	---		N/A	
Equipment Type: AMPLIFIERS								
APK2	PREAMPLIFIER	AGILENT TECHNOL	8449B	3008A01595	1-26.5GHZ	03/13/07	12	03/13/08
Equipment Type: ANTENNAS								
NDQ0	TUNED DIPOLE ANTENNA	EMCO	3121C-DB4	311	400-1000MHZ	03/06/07	12	03/06/08
NTA0	BILOG ANTENNA	CHASE EMC LTD.	BILOG CBL611	2057	0.03-2GHZ	08/21/06	12	08/21/07
NWI0	RIDGED WAVE GUIDE	AEL	H1498	153	2-18GHZ	10/09/06	12	10/09/07
NWI1	RIDGED WAVE GUIDE	AEL	H1498	154	2-18GHZ	10/09/06	12	10/09/07
Equipment Type: ATTENUATORS								
T1N1	10DB 20W ATTENUATOR	NARDA	766-10		DC-4GHZ	09/07/06	12	09/07/07
T2C9	20DB, 20W ATTENUATOR	NARDA	768-20	19	DC-11GHZ	01/10/07	12	01/10/08
T2DA	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-34	BH5446	DC-18GHZ	10/04/06	12	10/04/07
T2S3	20DB 25W ATTENUATOR	WEINSCHEL CORP	BV3544	BV3544	DC-18GHZ		12	
Equipment Type: CONTROLLERS								
CDS2	COMPUTER	GATEWAY	MFATXPNT NMZ	0028483108	1.8GHZ		N/A	
CMA0	MULTI-DEVICE CONTROLLER	EMCO	2090	9701-1213	---		N/A	
Equipment Type: METERS								
MPC1	DUAL POWER METER	HEWLETT PACKARD	EPM-442A	US37480258	0.1MHZ-50GHZ	02/23/07	12	02/23/08
MPCI	POWER SENSOR	HEWLETT PACKARD	8482A	US3318A27650	0.1-4200MHZ	07/03/06	12	07/03/07
Equipment Type: PRINTERS AND PLOTTERS								
HRE1	LASER JET 5P	HEWLETT PACKARD	C3150A	USHB061052	---		N/A	
Equipment Type: RECEIVERS								
RAC0	SPECTRUM ANALYZER	HEWLETT PACKARD	85660B	2449A01117	100HZ-22GHZ	07/18/06	12	07/18/07
RAC1	SPECTRUM ANALYZER	HEWLETT PACKARD	85660B	3407A08369	100HZ-22GHZ	02/21/07	12	02/21/08
RACB	RF PRESELECTOR	HEWLETT PACKARD	85685A	3506A01491	20HZ-2GHZ	02/21/07	12	02/21/08
RACE	RF PRESELECTOR W/ RECEIVER	HEWLETT PACKARD	85685A	3010A01194	20HZ-2GHZ	08/23/06	12	08/23/07
RAF1	QUASIPEAK ADAPTER	HEWLETT PACKARD	85650A	2043A00271	0.01-1000MHZ	02/21/07	12	02/21/08
RAF3	QUASIPEAK ADAPTER	HEWLETT PACKARD	85650A	3303A01775	0.01-1000MHZ	02/21/07	12	02/21/08
RBB0	EMI TEST RECEIVER 20HZ TO	ROHDE & SCHWARZ	ESIB40	100250	20 HZ TO 40GHZ	09/29/06	12	09/29/07
Equipment Type: SIGNAL GENERATORS								
GRD0	SIGNAL GENERATOR	HEWLETT PACKARD	E4432B	US38080222	250KHZ-3.0GHZ	08/28/06	12	08/28/07

Cal. Interval: Listed in Months I/O: Initial Only N/A: Not Applicable
Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.

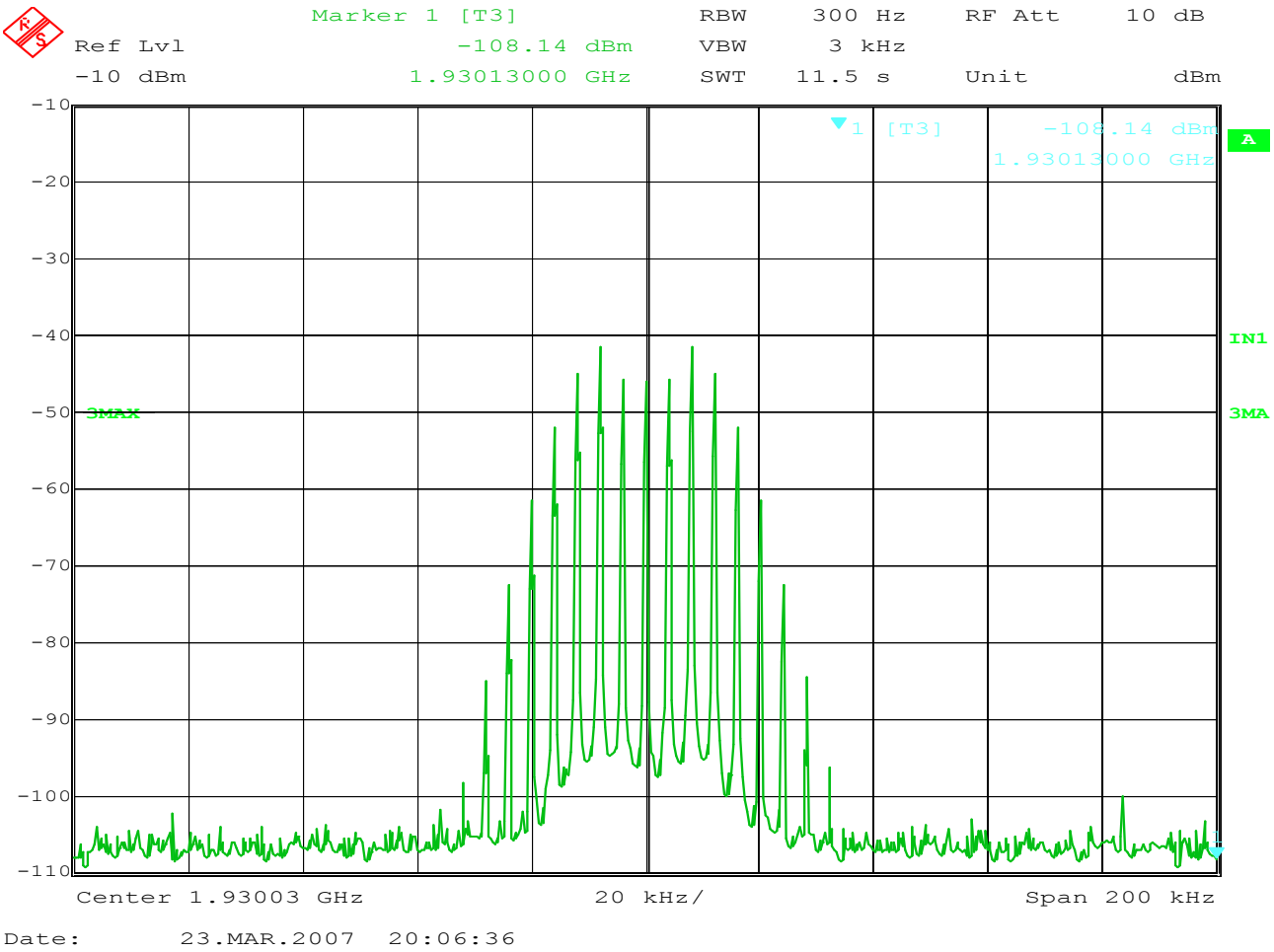
RF Output Power

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 881.5MHz
DATE : 03/21/2007
NOTES : All modulations
NOTES :

FREQUENCY		Modulation	Downlink dBm	Downlink Watts
Block Edges	Low, Middle, High			
1930.03	---	AMPS	12	0.016
1989.97	---	AMPS	12	0.016
---	1935.00	AMPS	12	0.016
---	1955.00	AMPS	12	0.016
---	1985.00	AMPS	12	0.016
1931.23	---	CDMA	12	0.016
1988.77	---	CDMA	12	0.016
---	1935.00	CDMA	12	0.016
---	1955.00	CDMA	12	0.016
---	1985.00	CDMA	12	0.016
1930.30	---	GSM	12	0.016
1989.70	---	GSM	12	0.016
---	1935.00	GSM	12	0.016
---	1955.00	GSM	12	0.016
---	1985.00	GSM	12	0.016
1930.03	---	TDMA	12	0.016
1989.97	---	TDMA	12	0.016
---	1935.00	TDMA	12	0.016
---	1955.00	TDMA	12	0.016
---	1985.00	TDMA	12	0.016

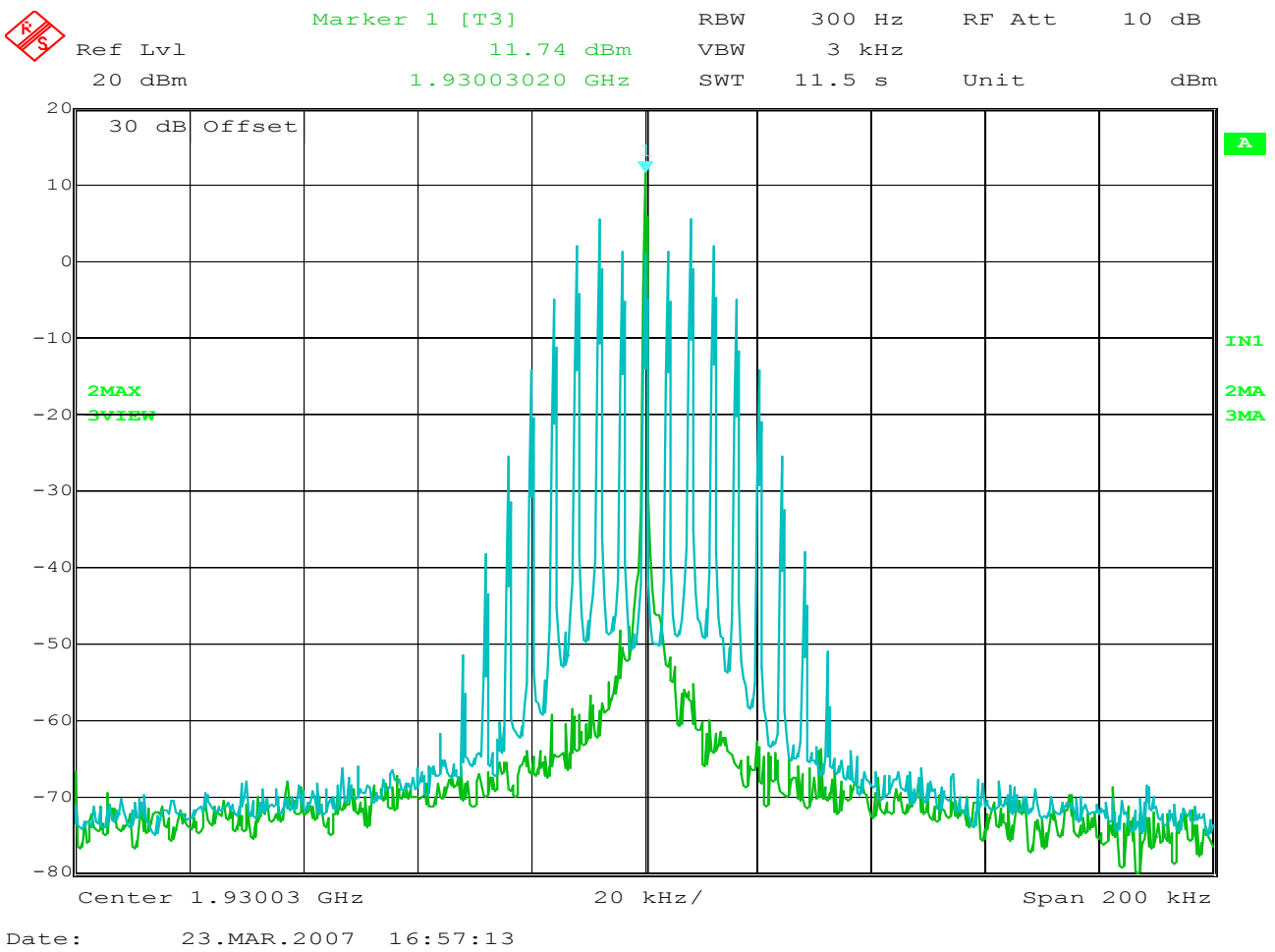
Checked BY Richard E. King :

Richard E. King



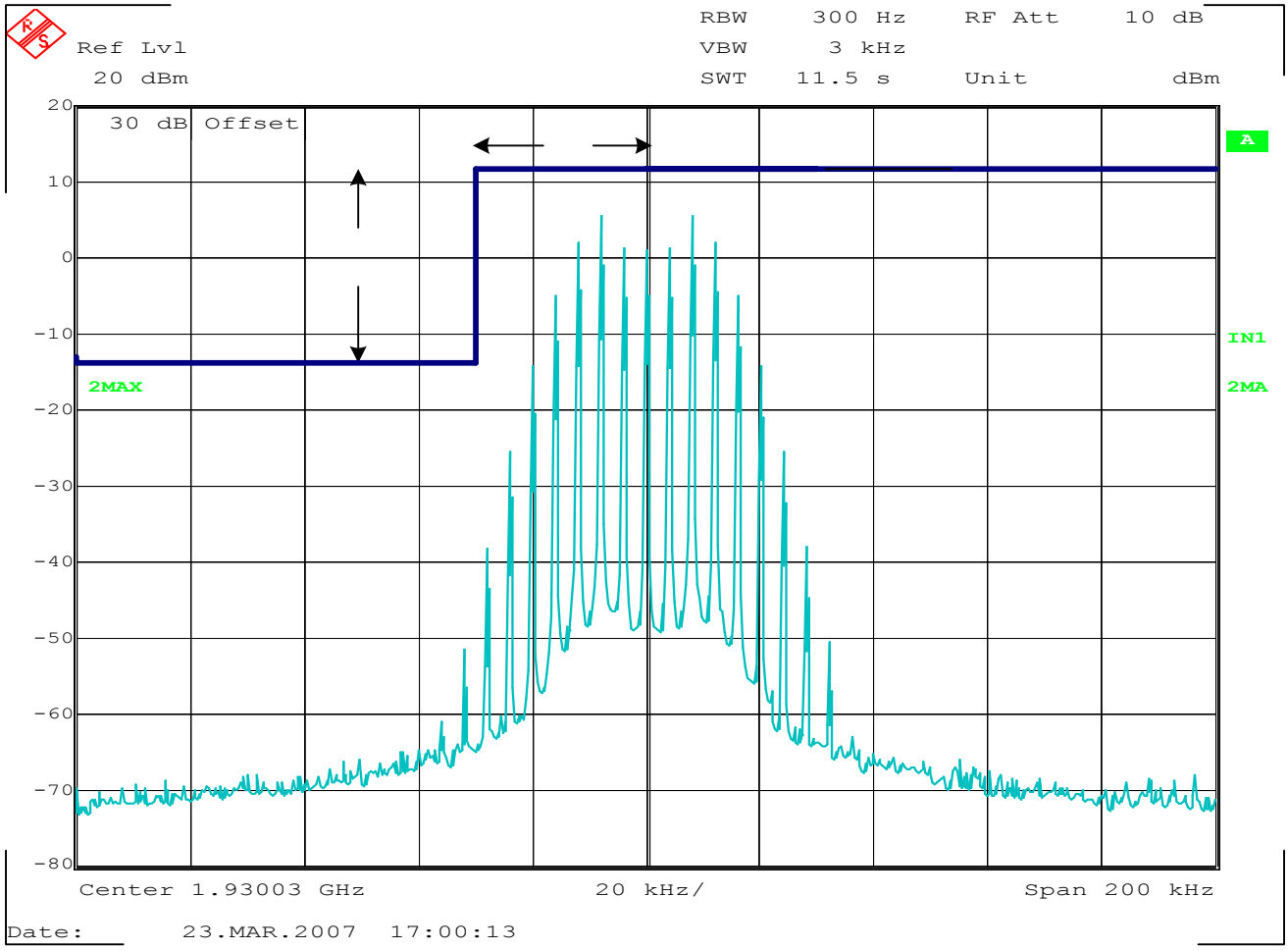
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : AMPS (FM) Input
NOTES : AMPS (FM)



Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : CW vs AMPS (FM)
NOTES : AMPS (FM) Modulation



Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : AMPS (FM) Output
NOTES : AMPS (FM) Modulation

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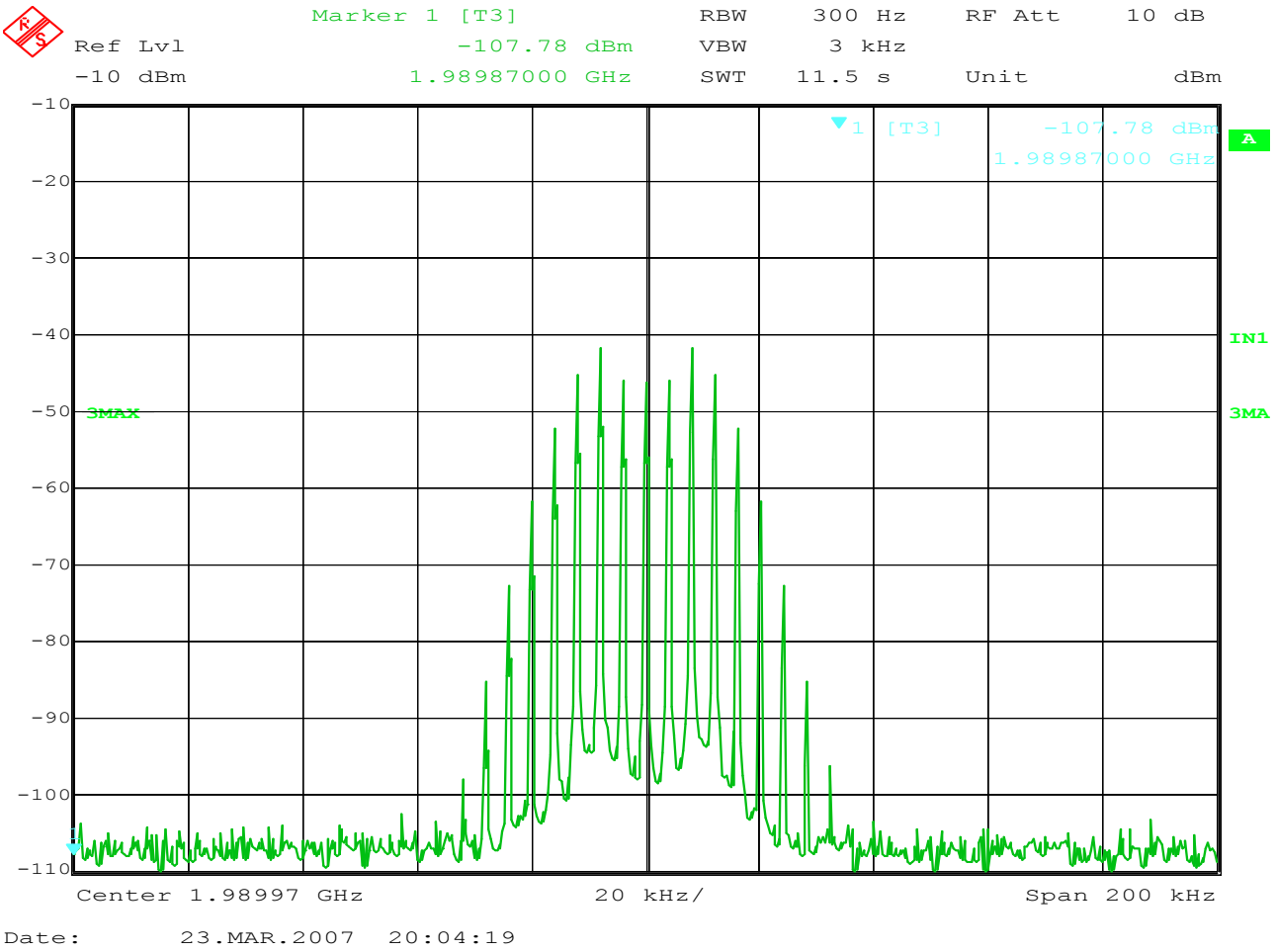
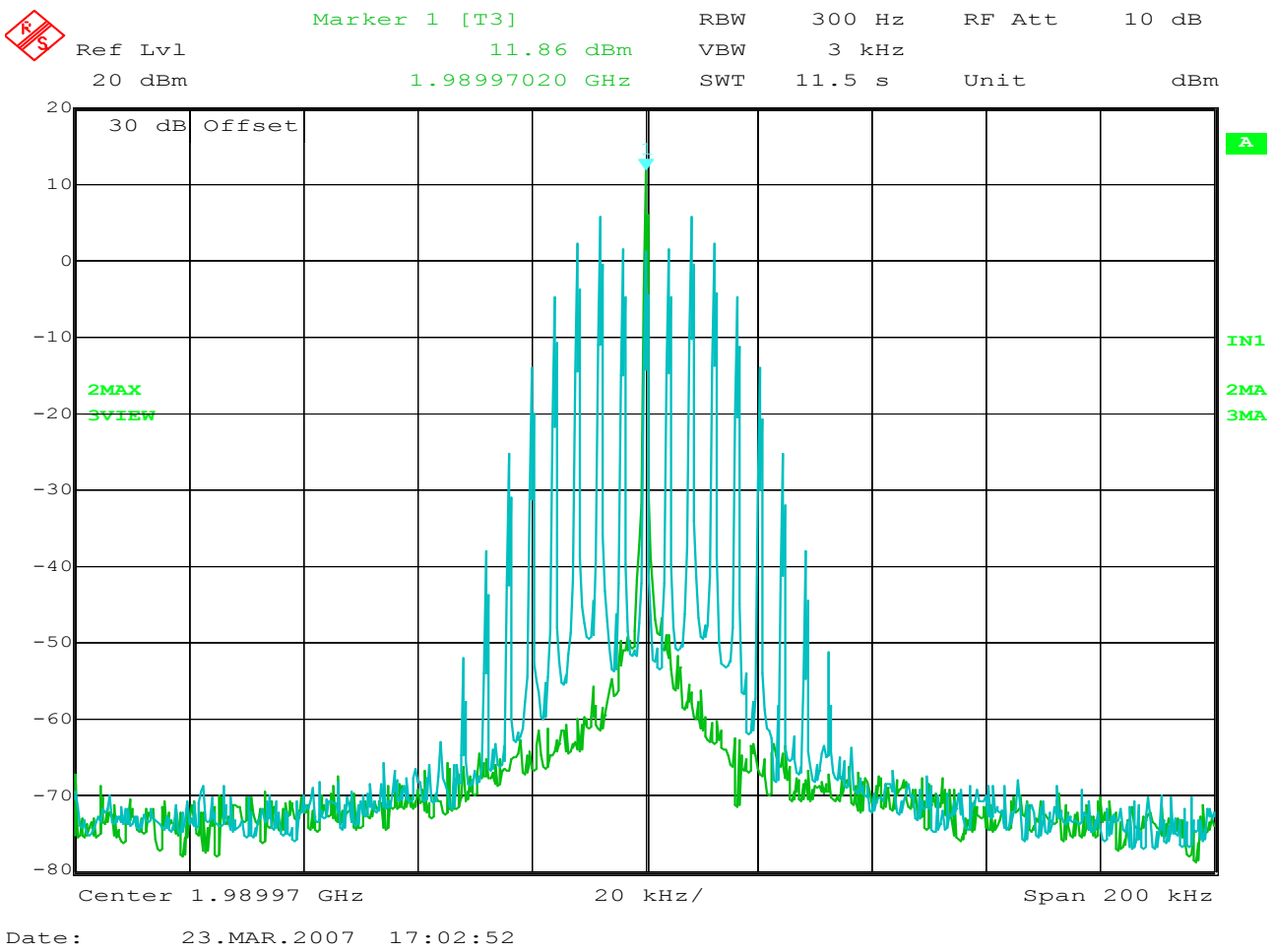


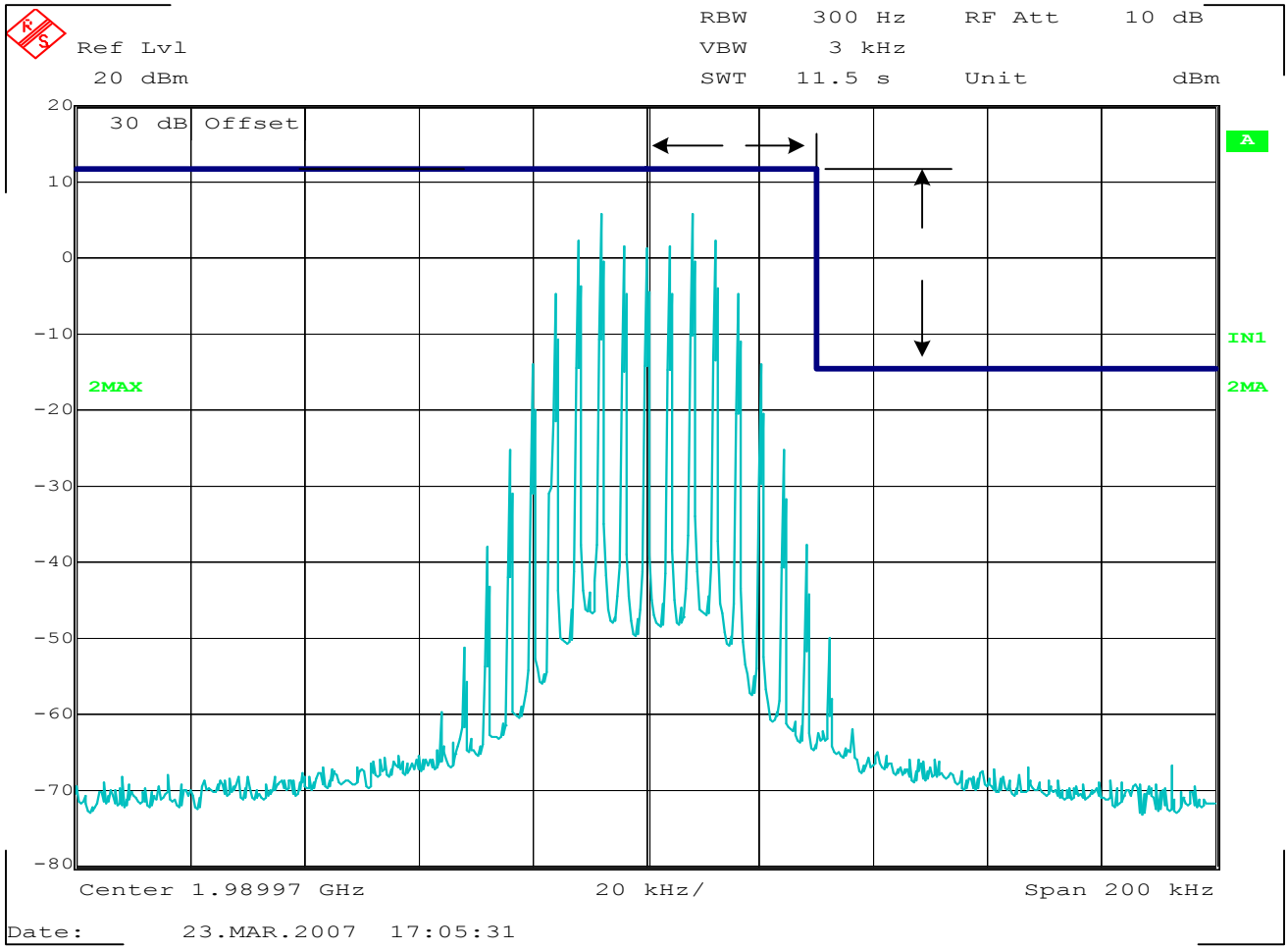
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : AMPS (FM) Input
NOTES : AMPS (FM)



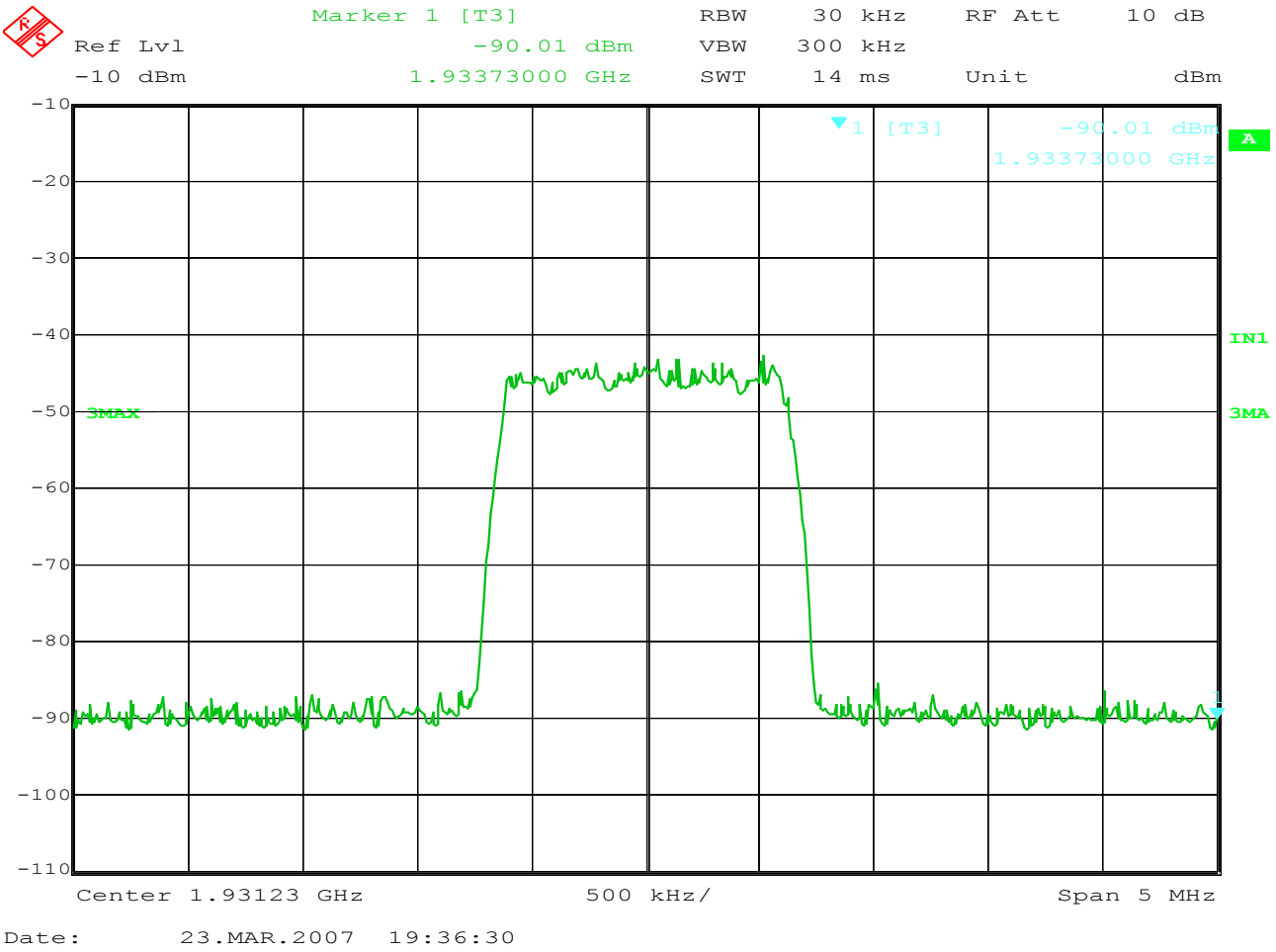
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : CW vs AMPS (FM)
NOTES : AMPS (FM) Modulation



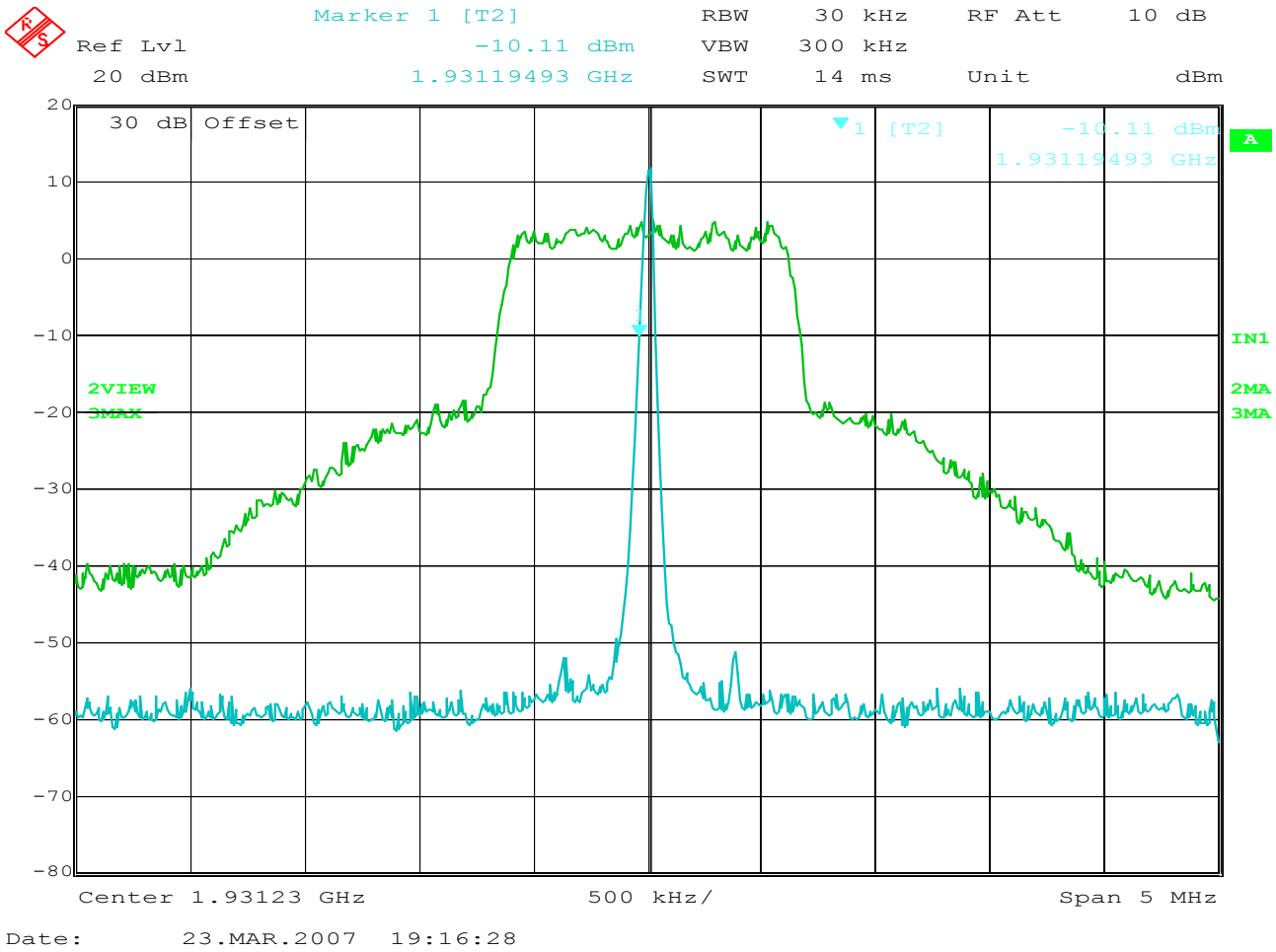
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : AMPS (FM) Output
NOTES : AMPS (FM) Modulation



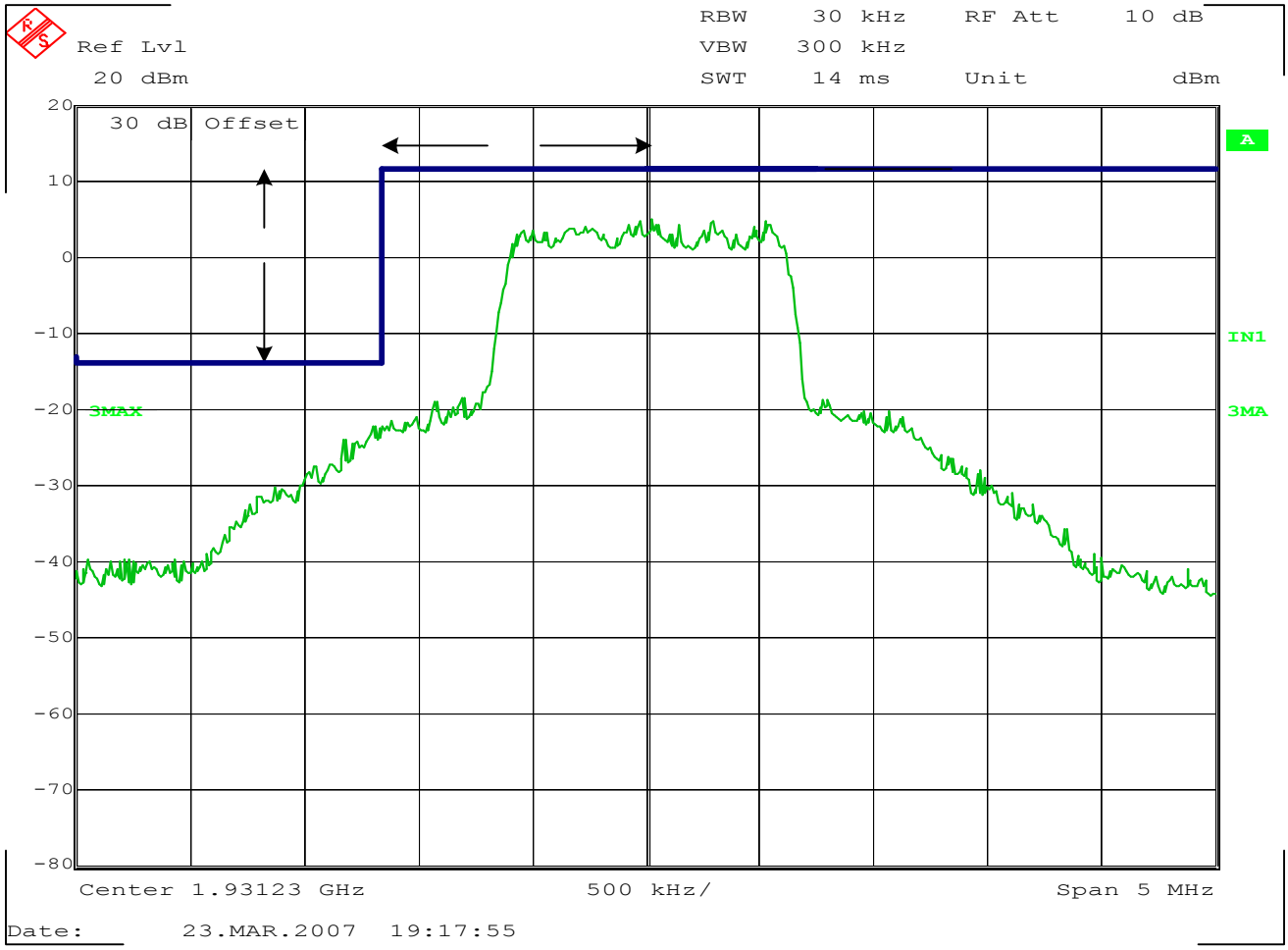
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1931.23MHz
NOTES : CDMA Input
NOTES : CDMA



Occupied Bandwidth

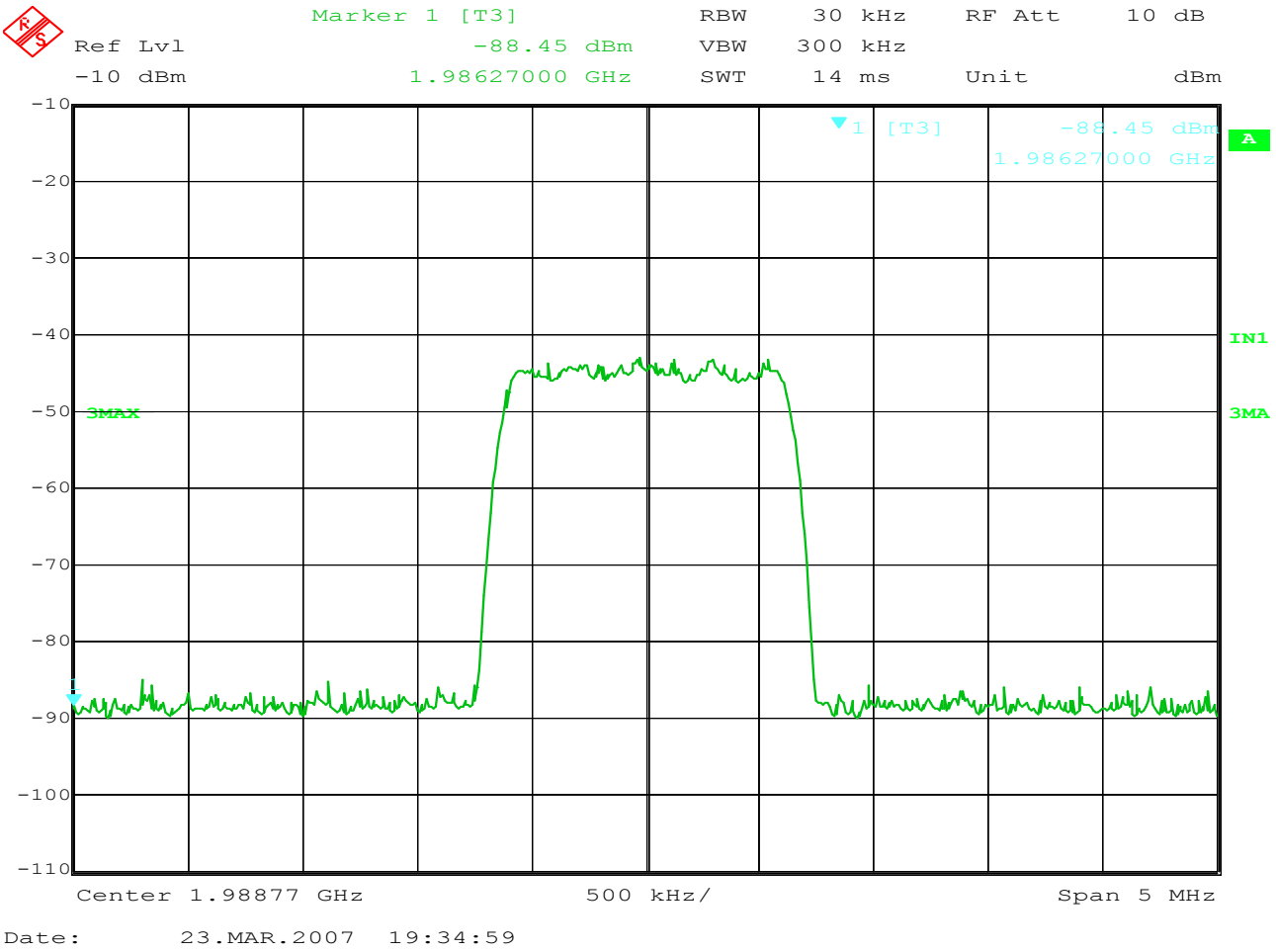
MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1931.23MHz
NOTES : CW vs CDMA Output
NOTES : CDMA



Occupied Bandwidth

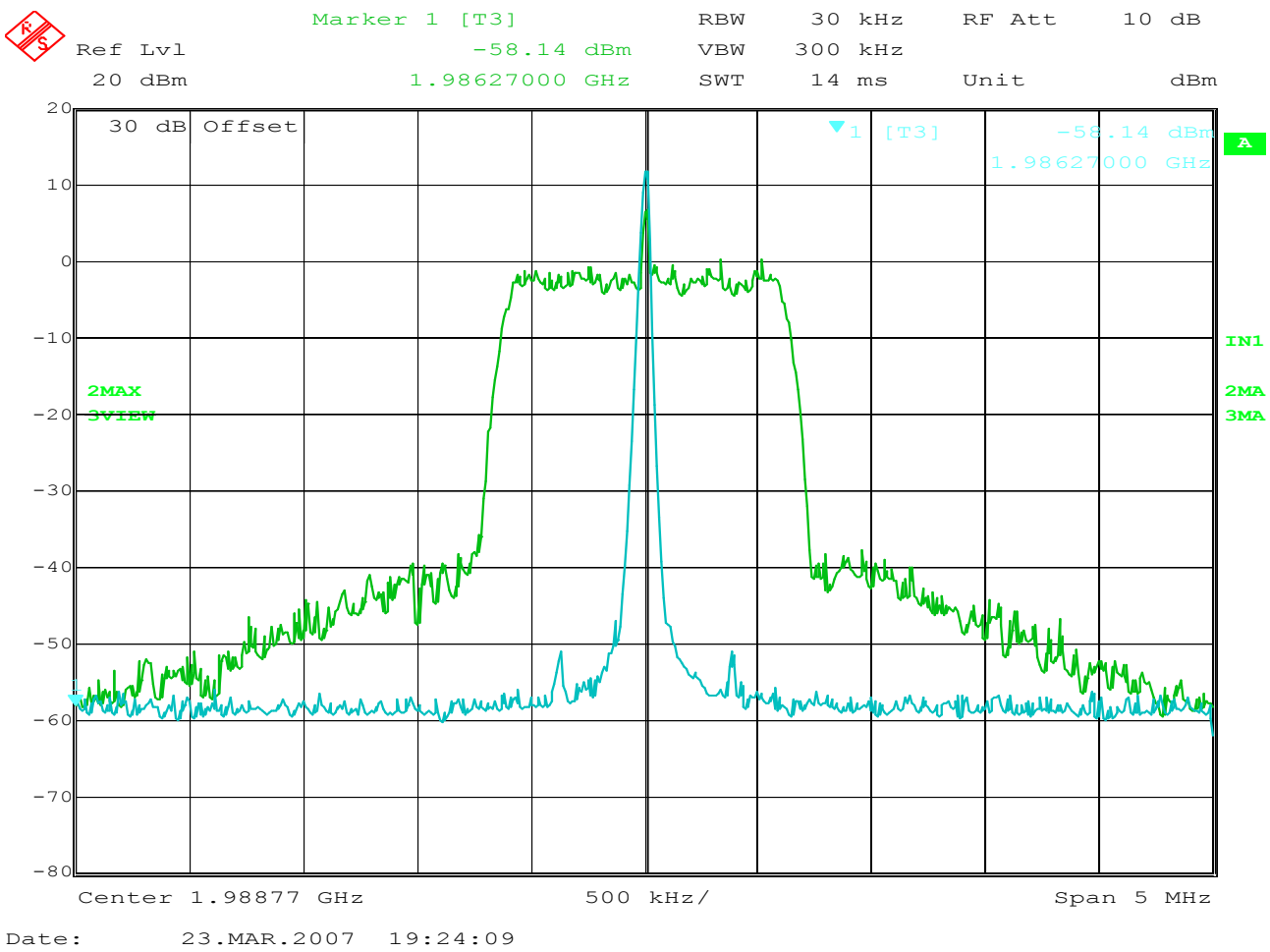
MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1931.23MHz
NOTES : CDMA Output
NOTES : CDMA

25 dBc



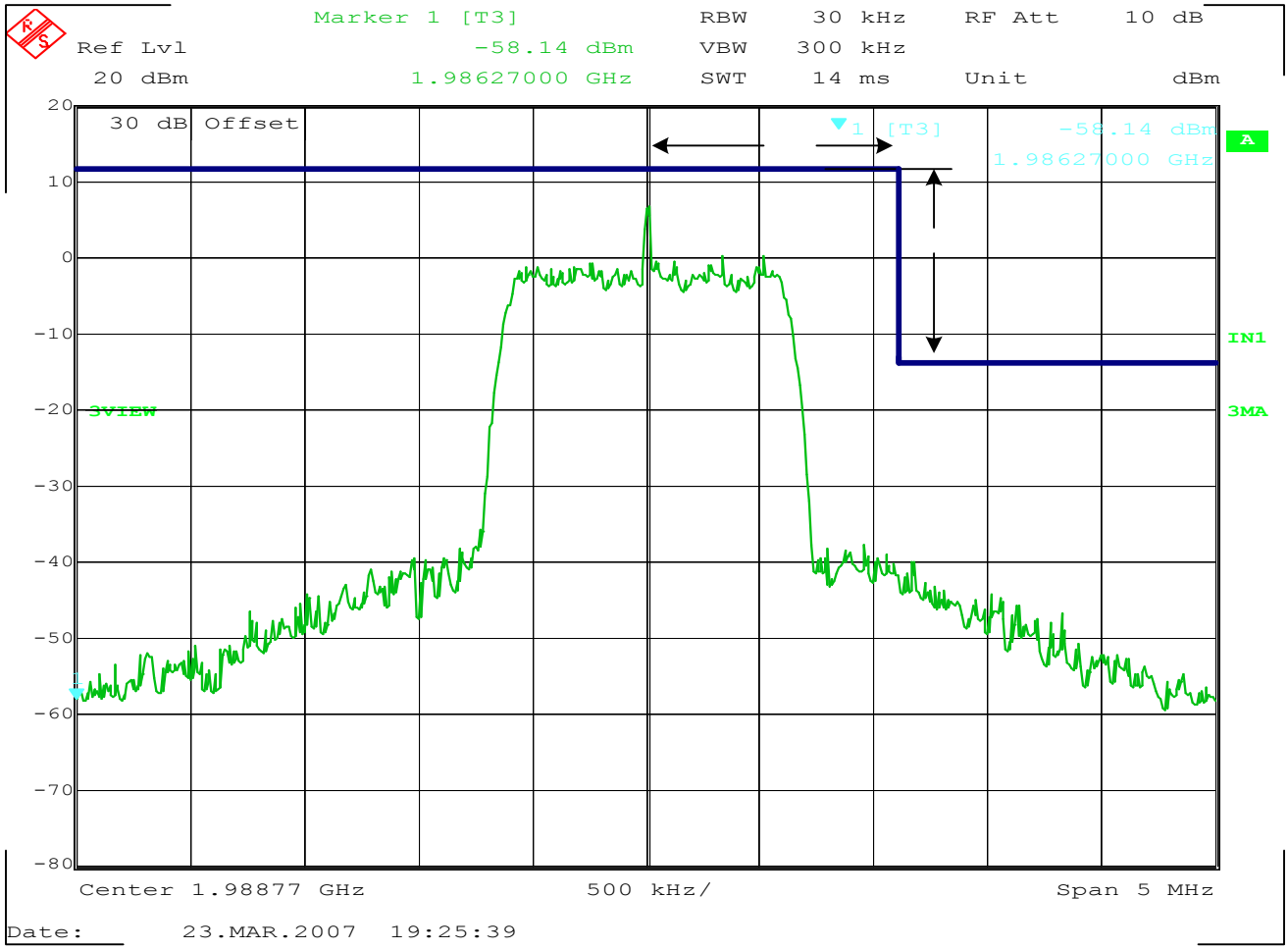
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1988.77MHz
NOTES : CDMA Input
NOTES : CDMA



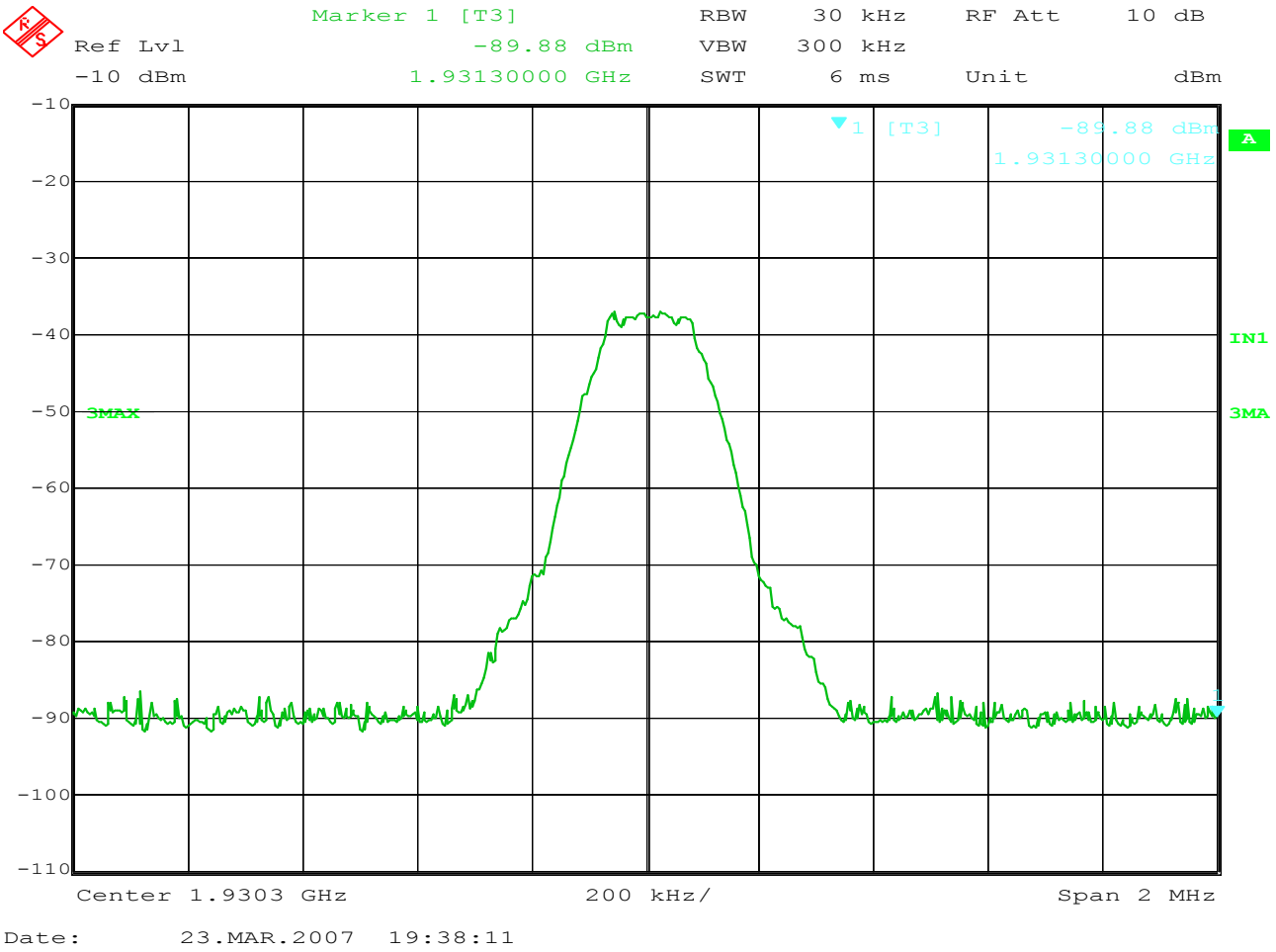
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1988.77MHz
NOTES : CW vs CDMA Output
NOTES : CDMA



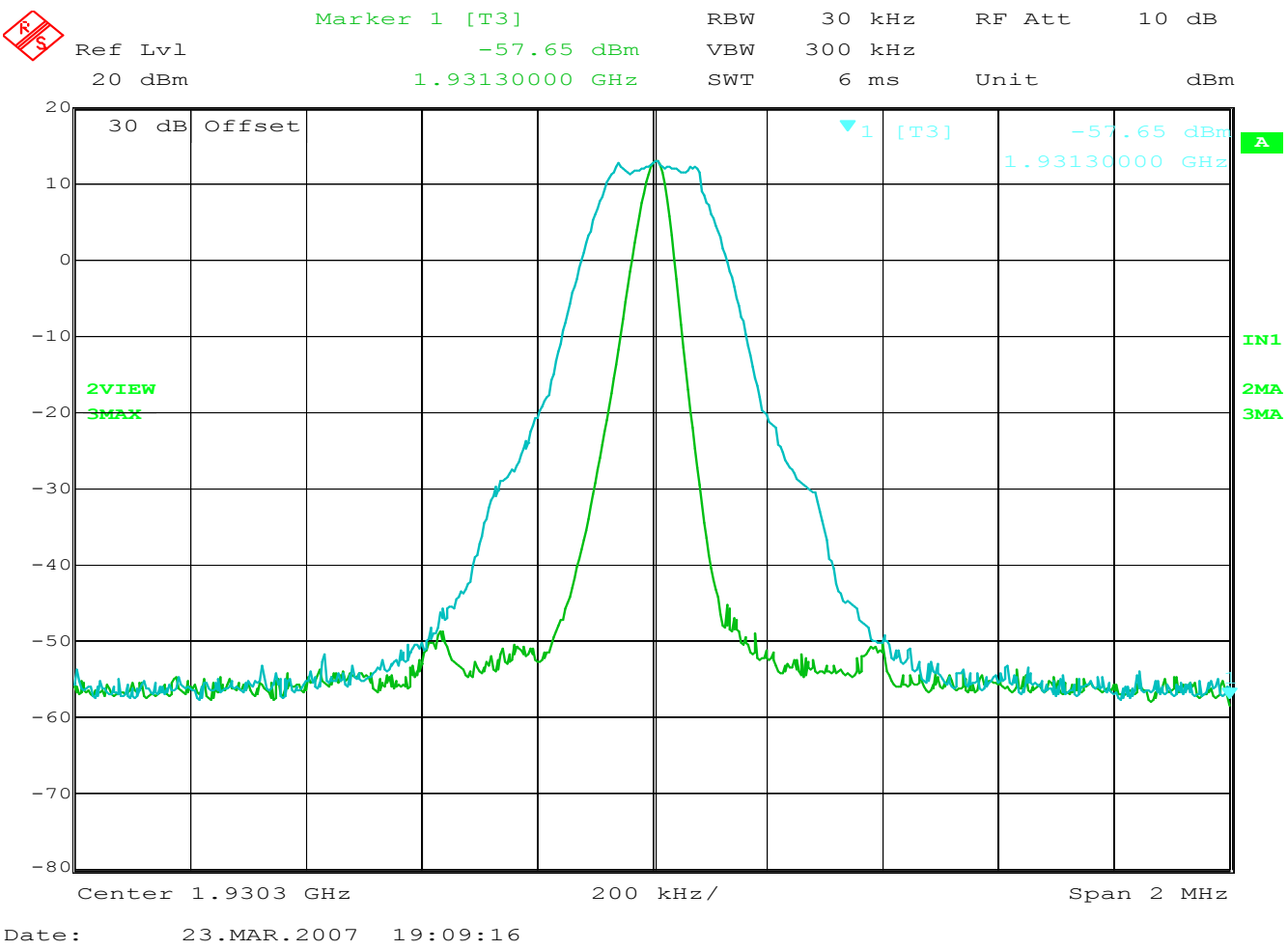
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1988.77MHz
NOTES : CDMA Output
NOTES : CDMA



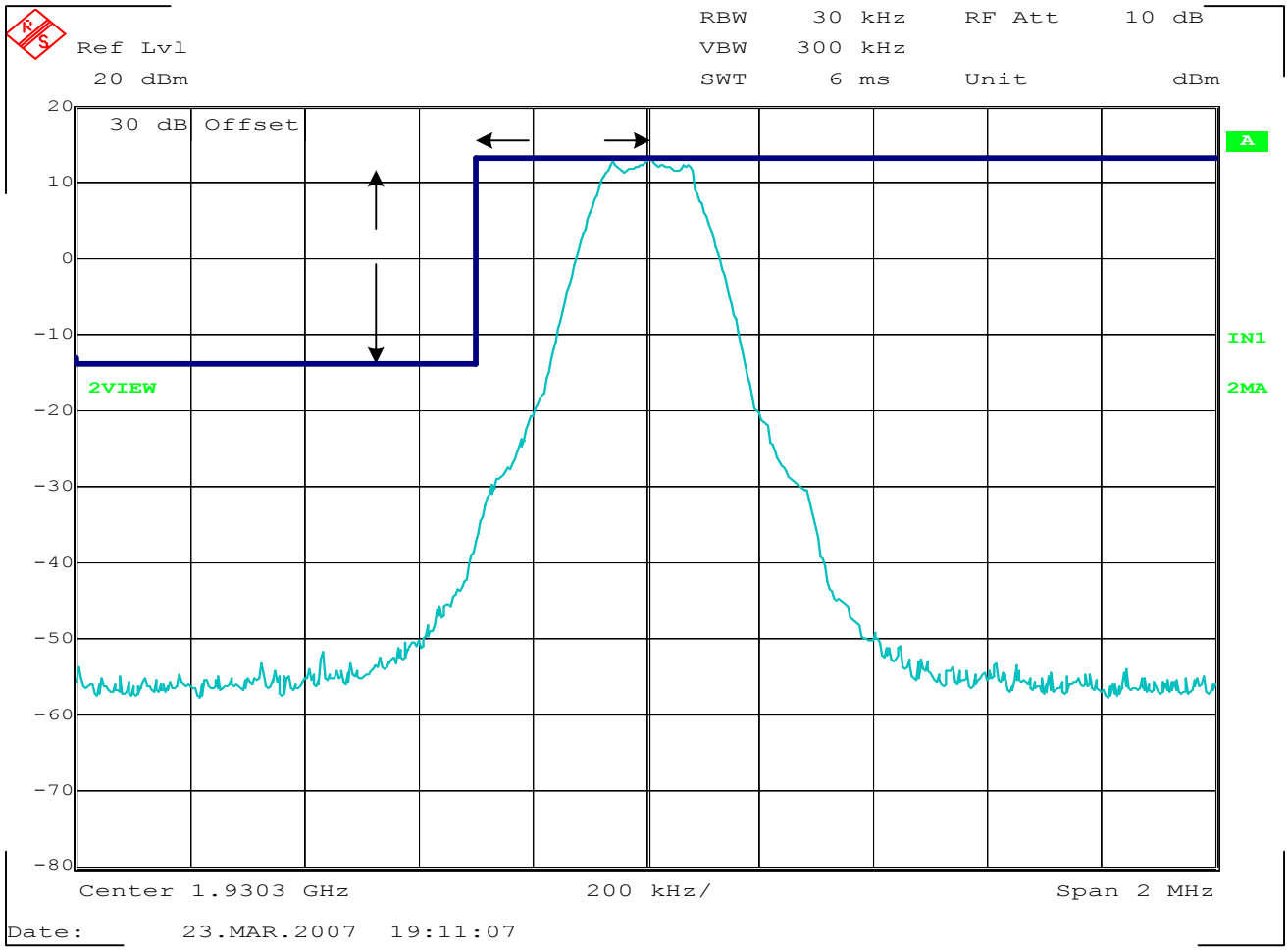
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.30MHz
NOTES : GSM Input
NOTES : GSM



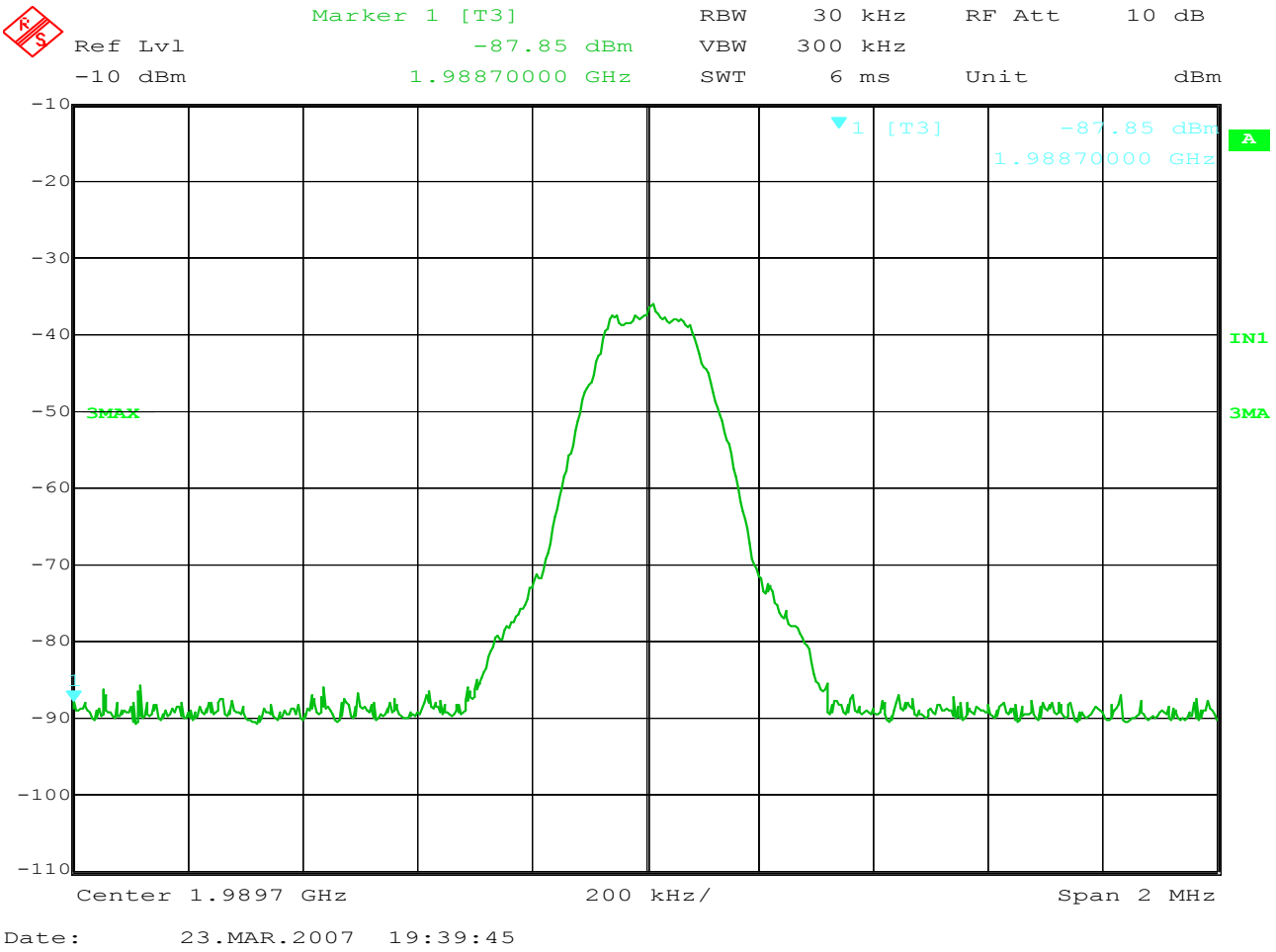
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.3MHz
NOTES : CW vs GSM Output
NOTES : GSM



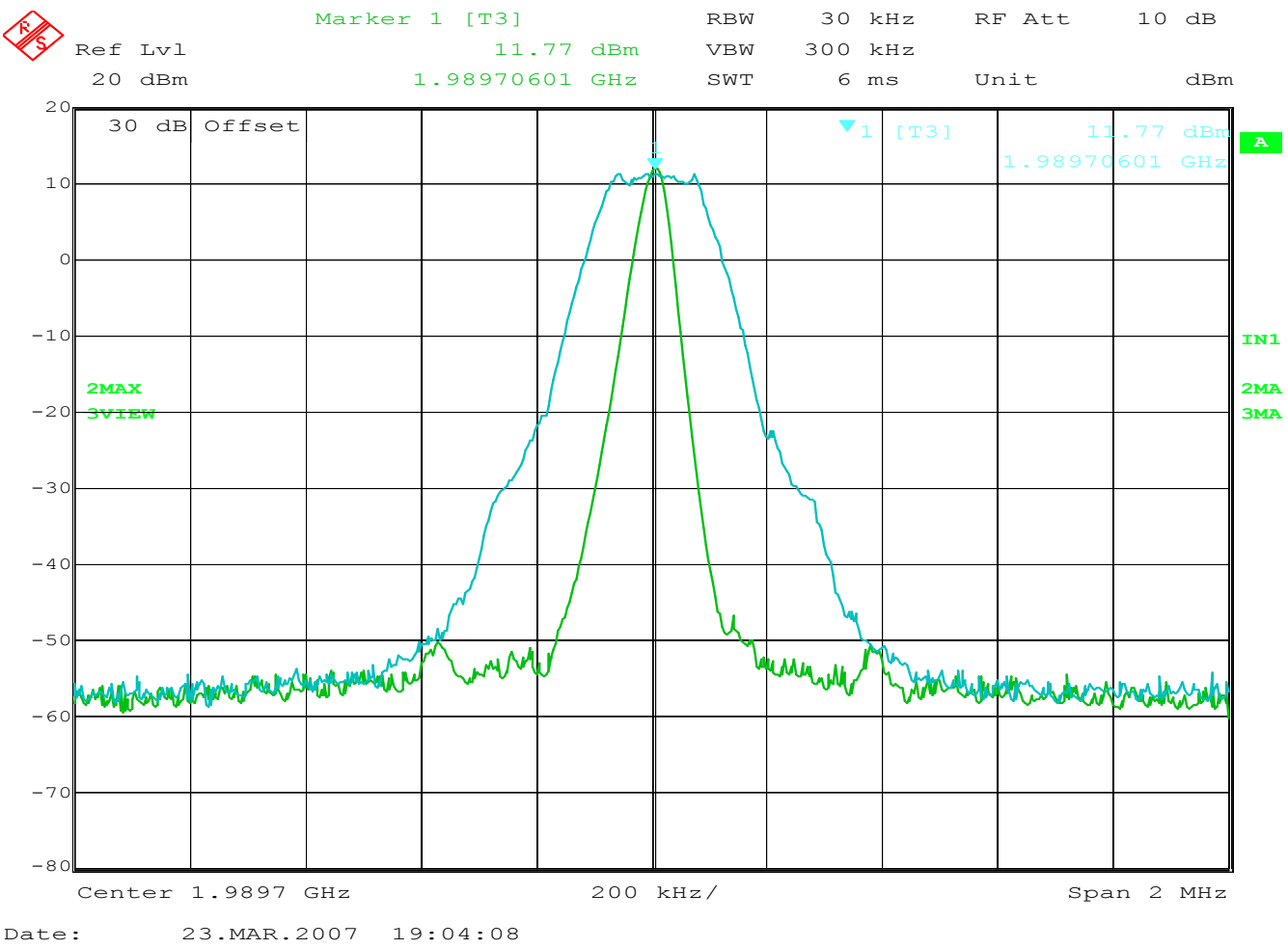
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.7MHz
NOTES : GSM Output
NOTES : GSM



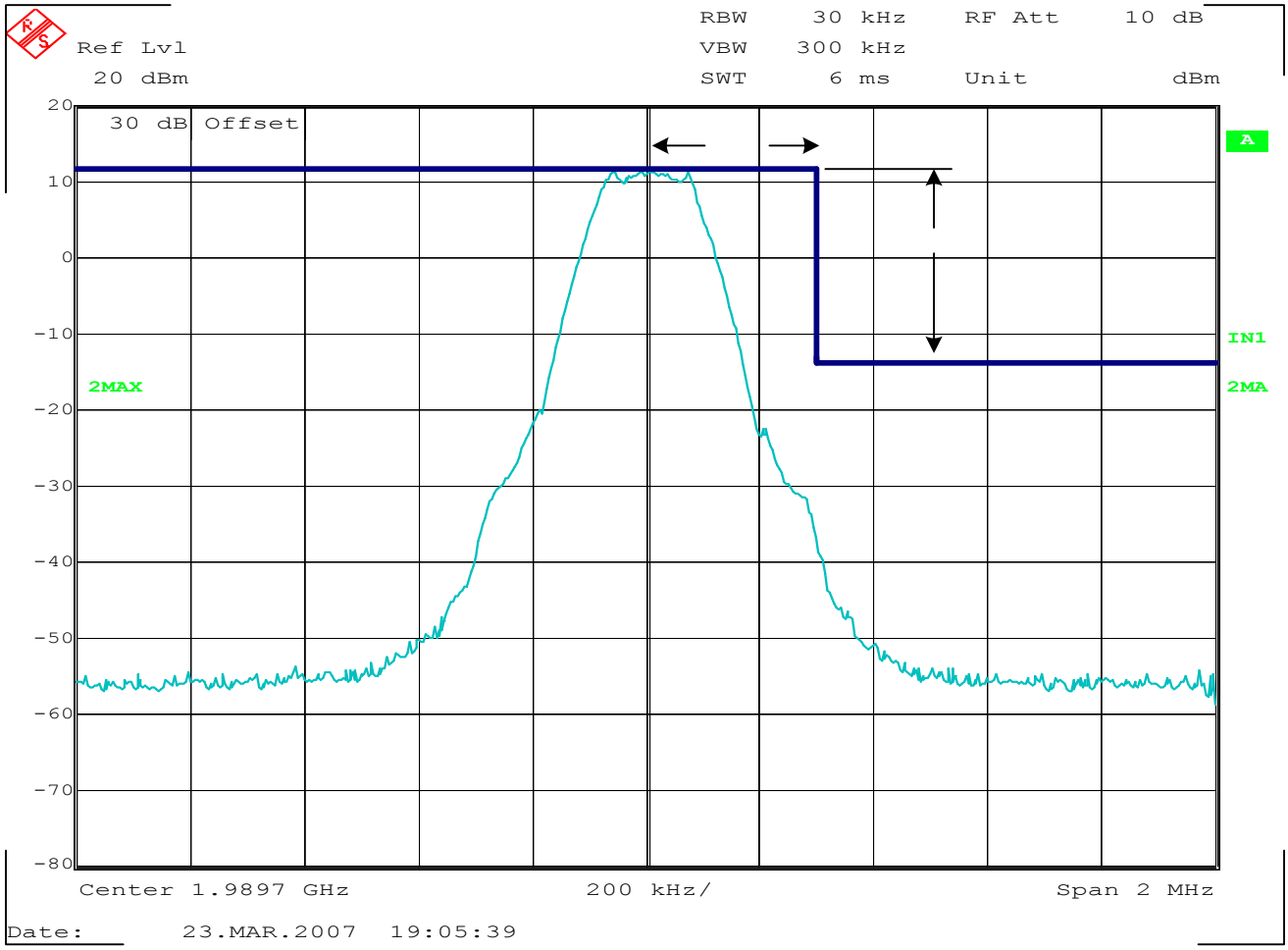
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.70MHz
NOTES : GSM Input
NOTES : GSM



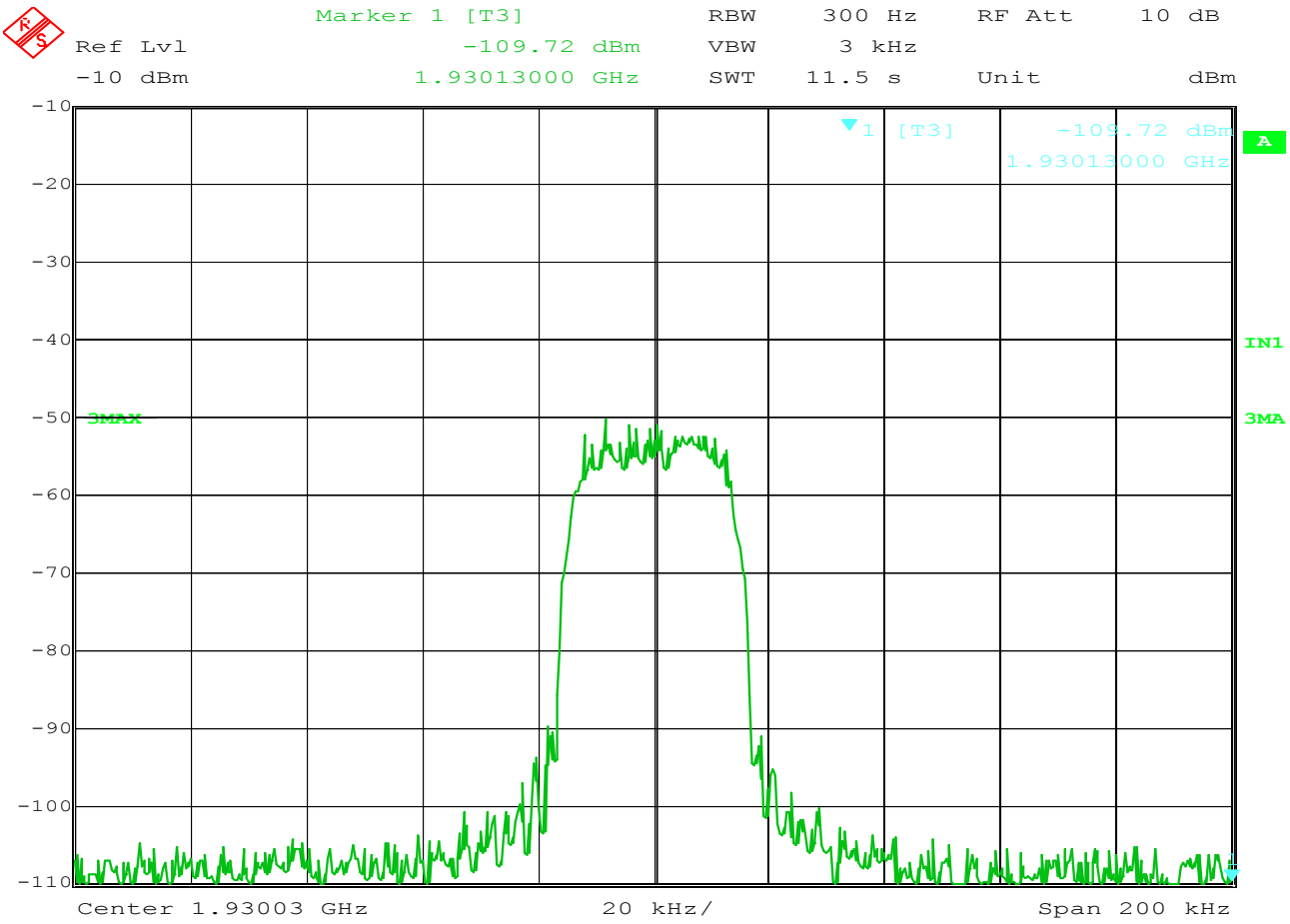
Occupied Bandwidth

MANUFACTURER	: 3XA Wireless Inc.
TEST ITEM	: 8811960A
MODEL NUMBER	: 000001
TEST MODE	: Tx @ 1989.7MHz
NOTES	: CW vs GSM Output
NOTES	: GSM



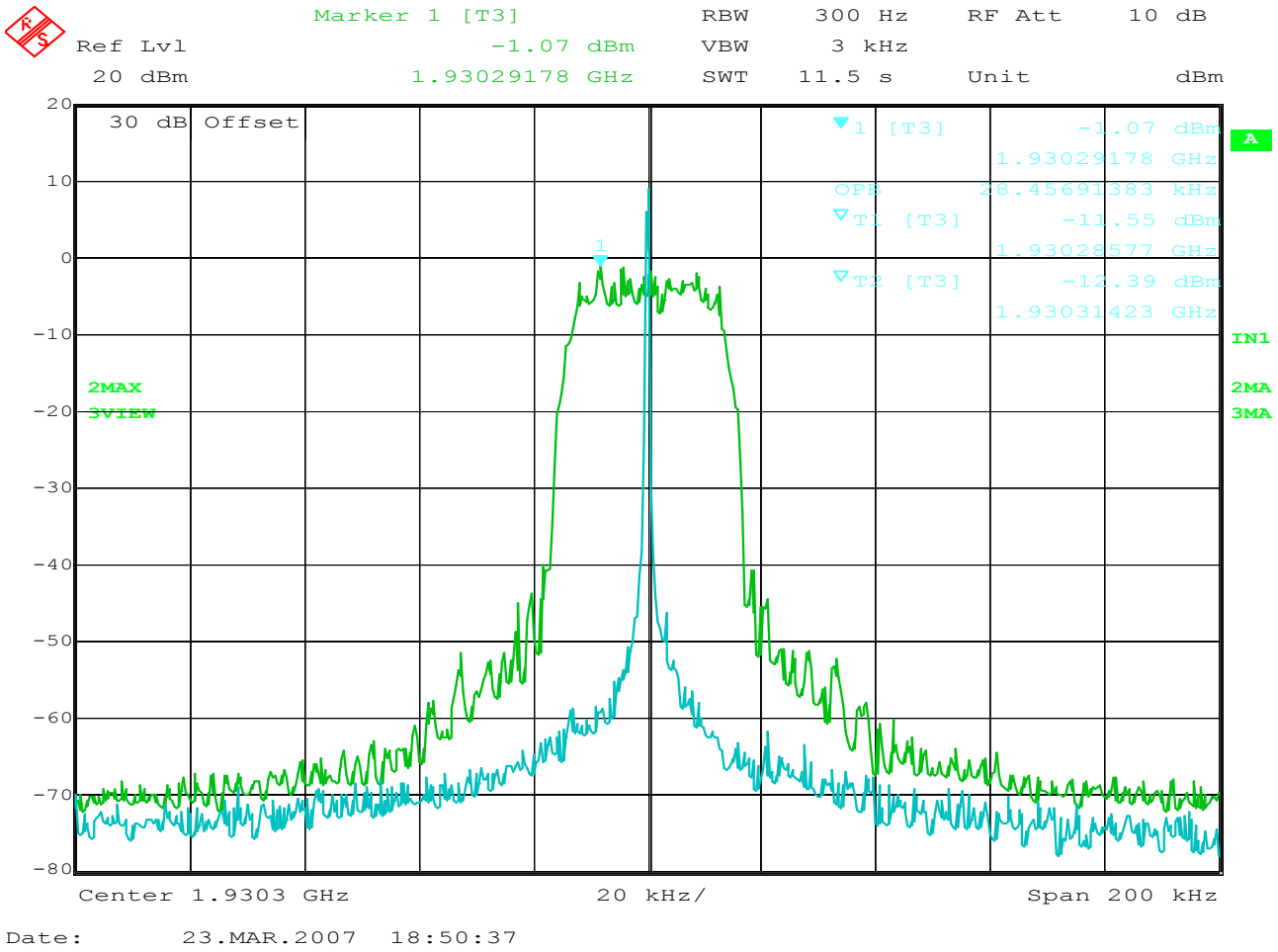
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.7MHz
NOTES : GSM Output
NOTES : GSM



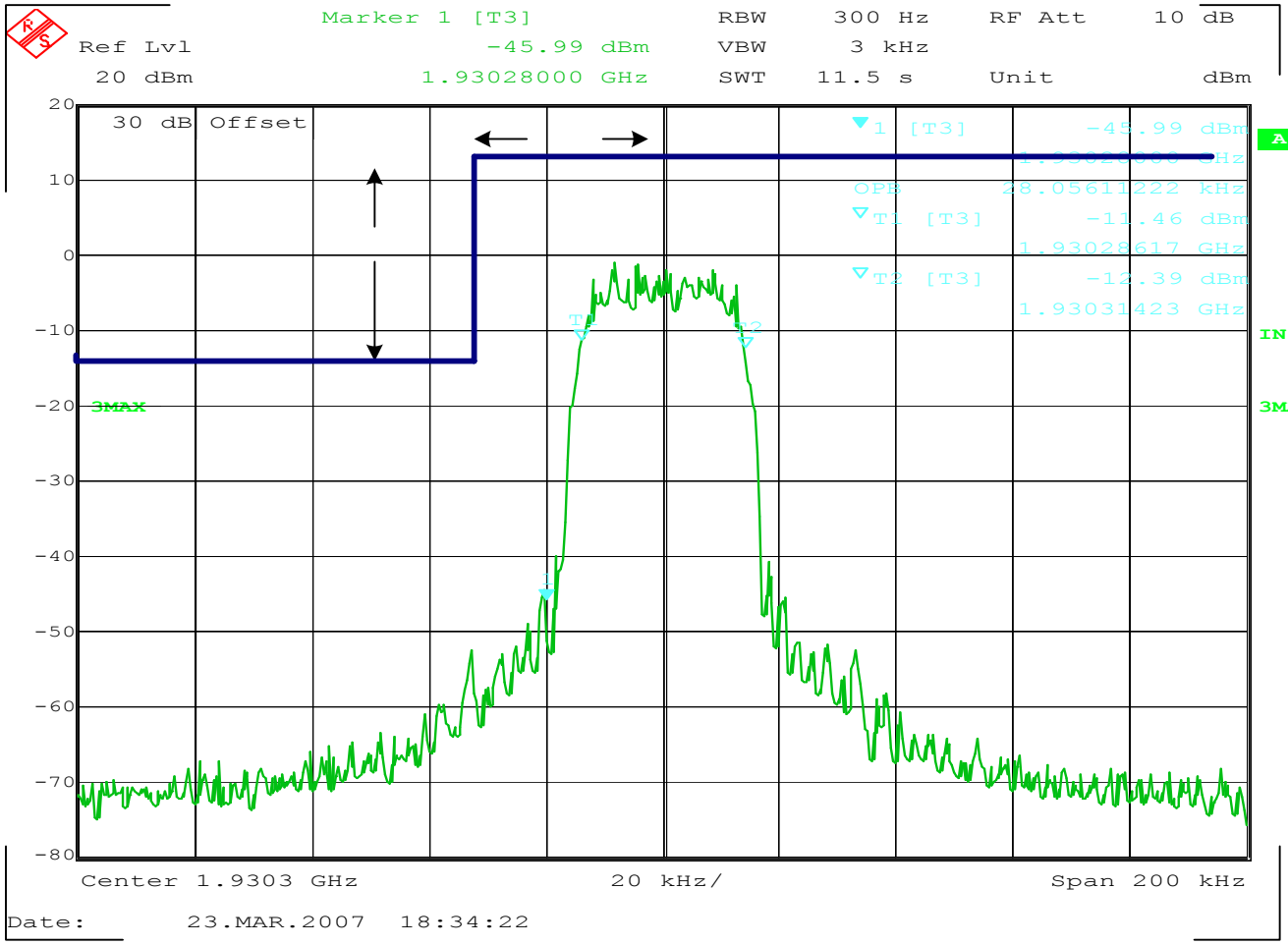
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : TDMA Input
NOTES : TDMA



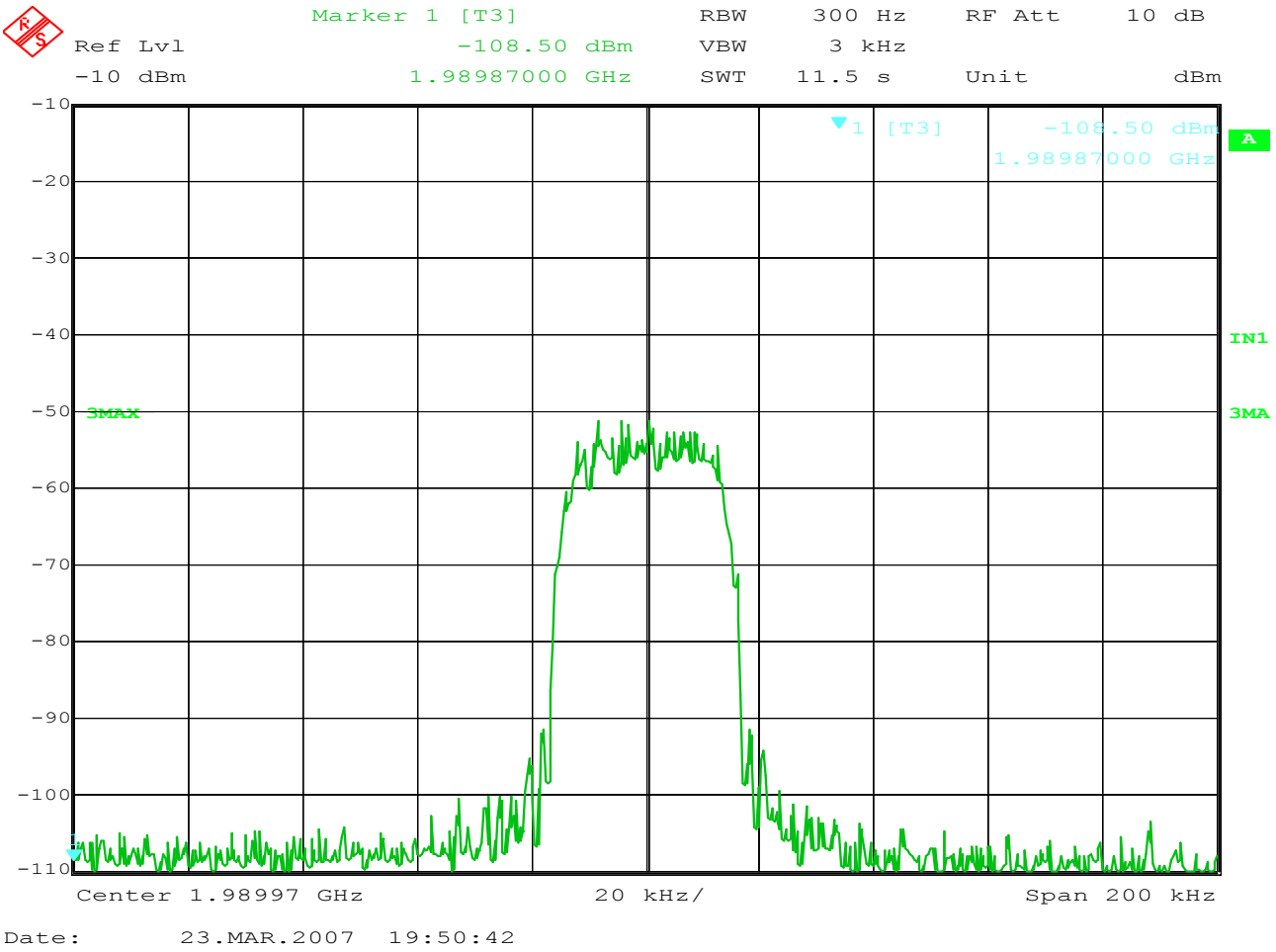
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.3MHz
NOTES : CW vs TDMA Output
NOTES : TDMA



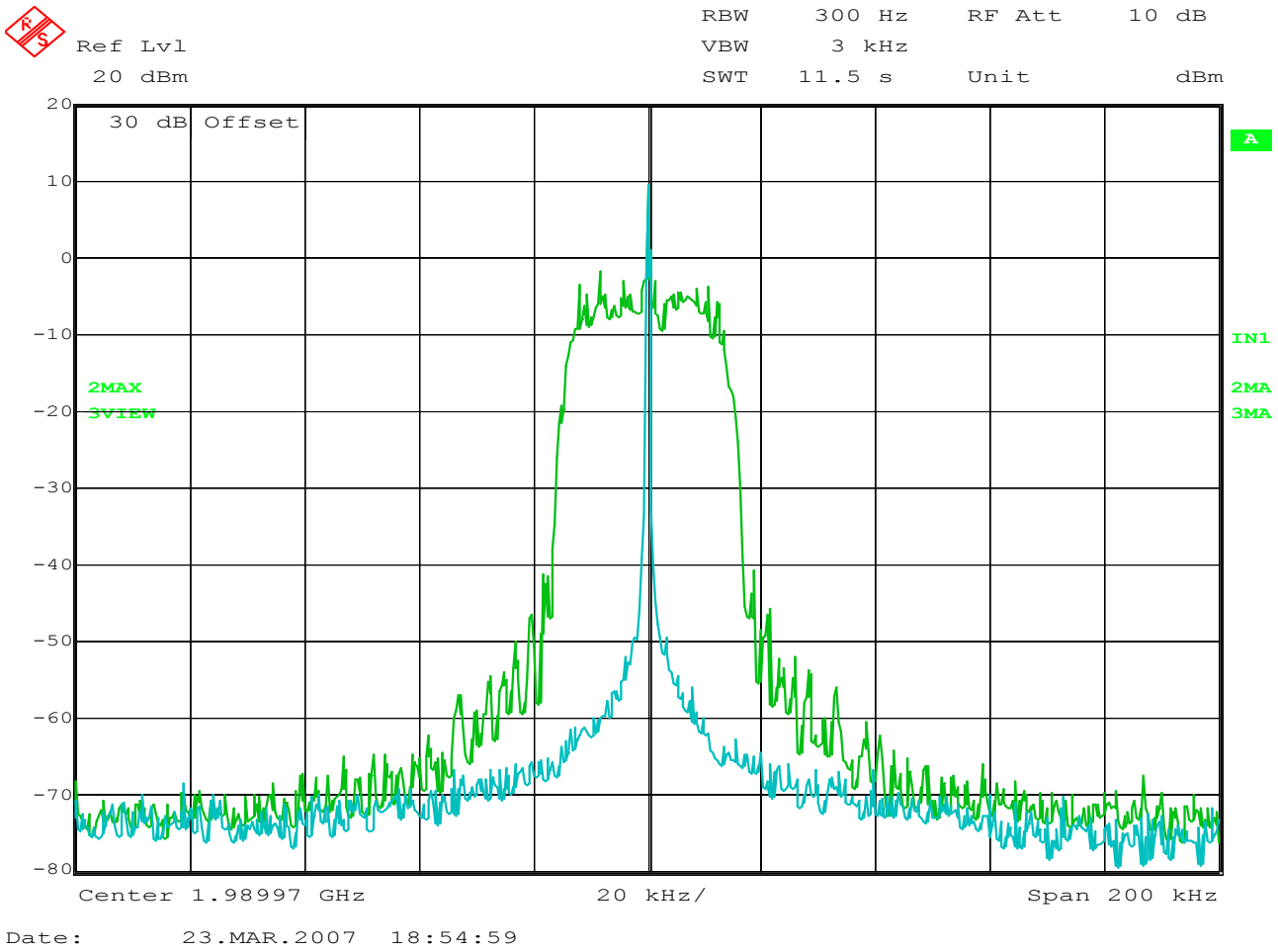
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.3MHz
NOTES : TDMA Output
NOTES : TDMA



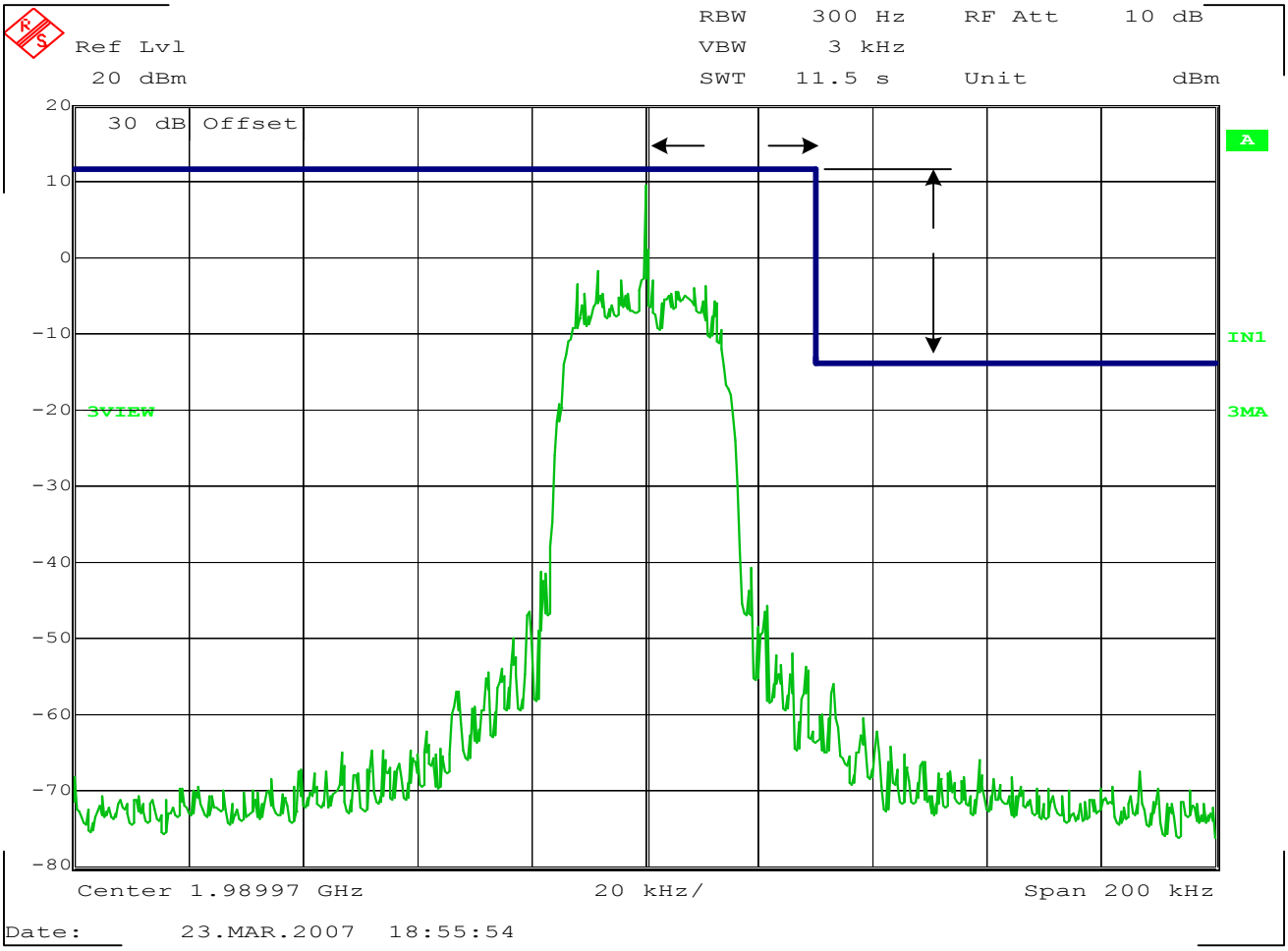
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : TDMA Input
NOTES : TDMA



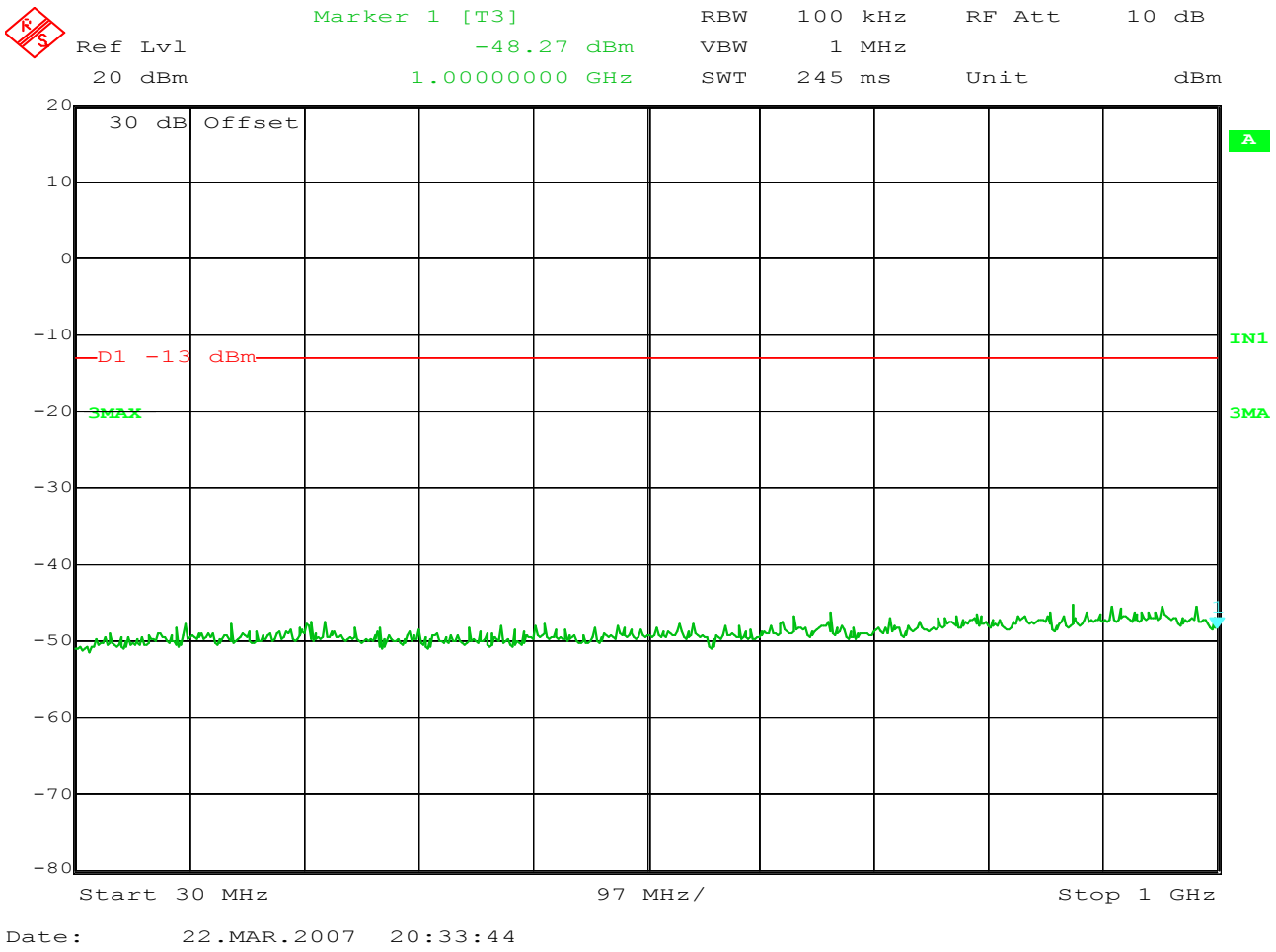
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : CW vs TDMA
NOTES : TDMA



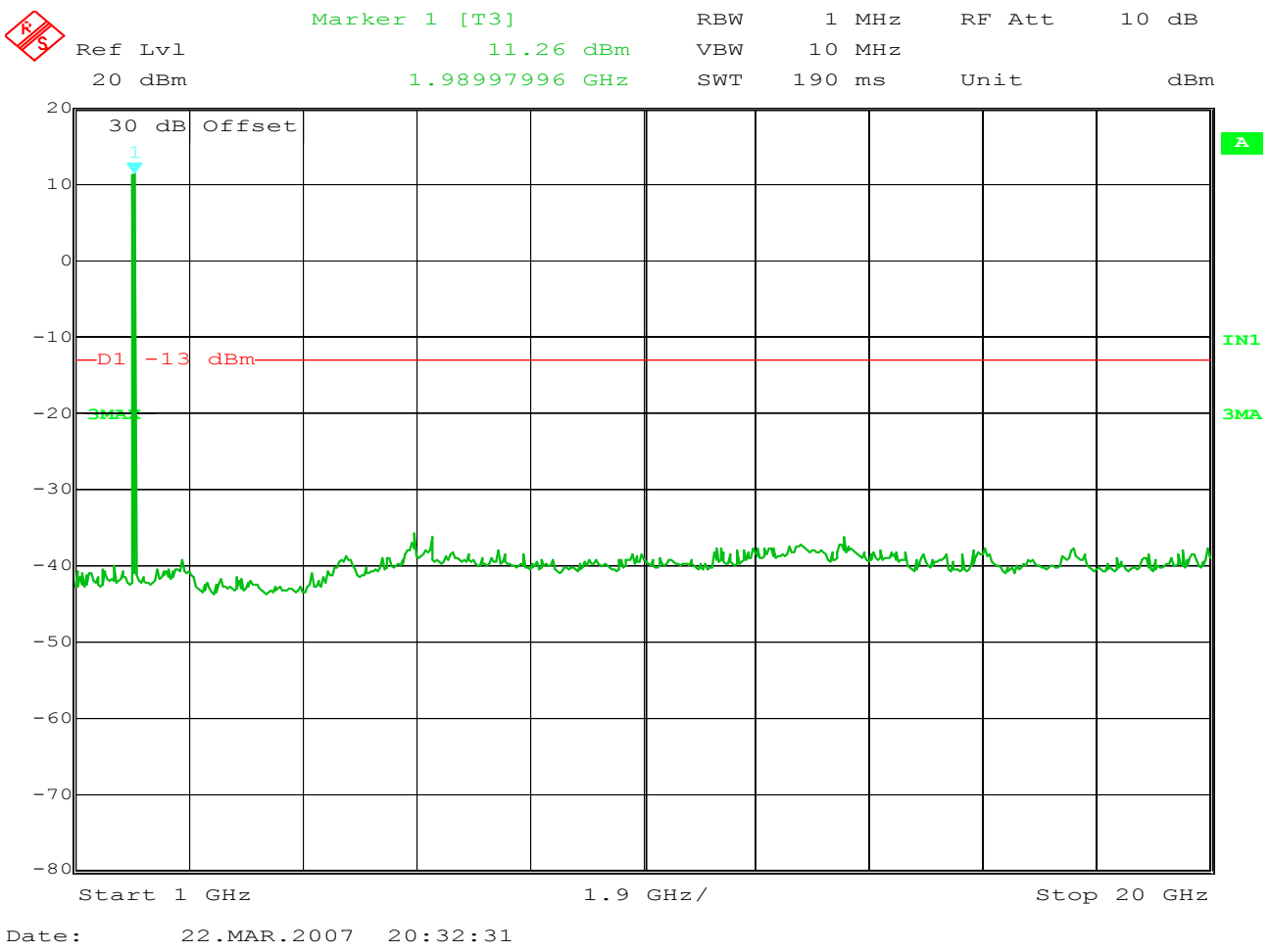
Occupied Bandwidth

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : TDMA Output
NOTES : TDMA



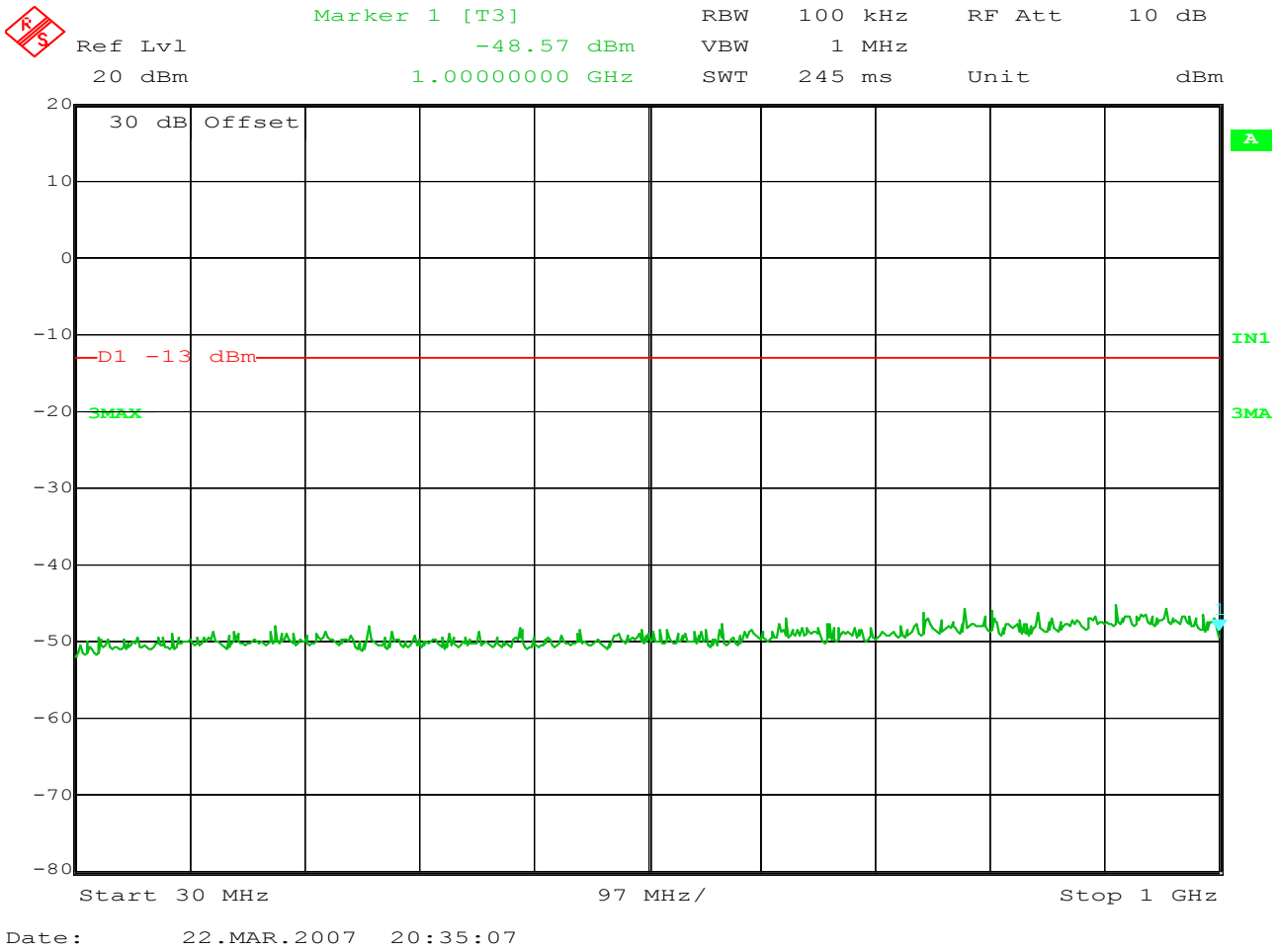
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : AMPS (FM)



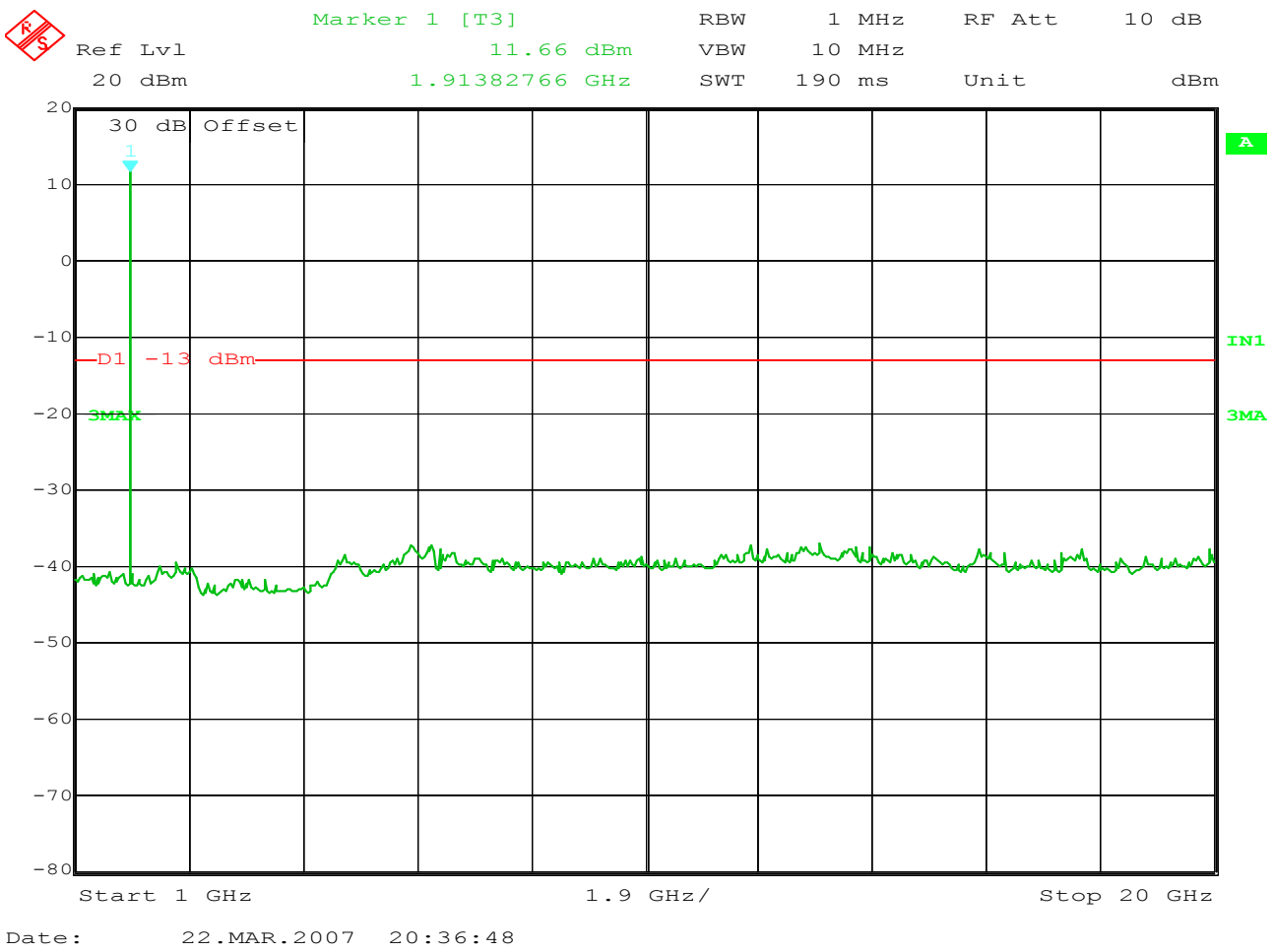
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : AMPS (FM)



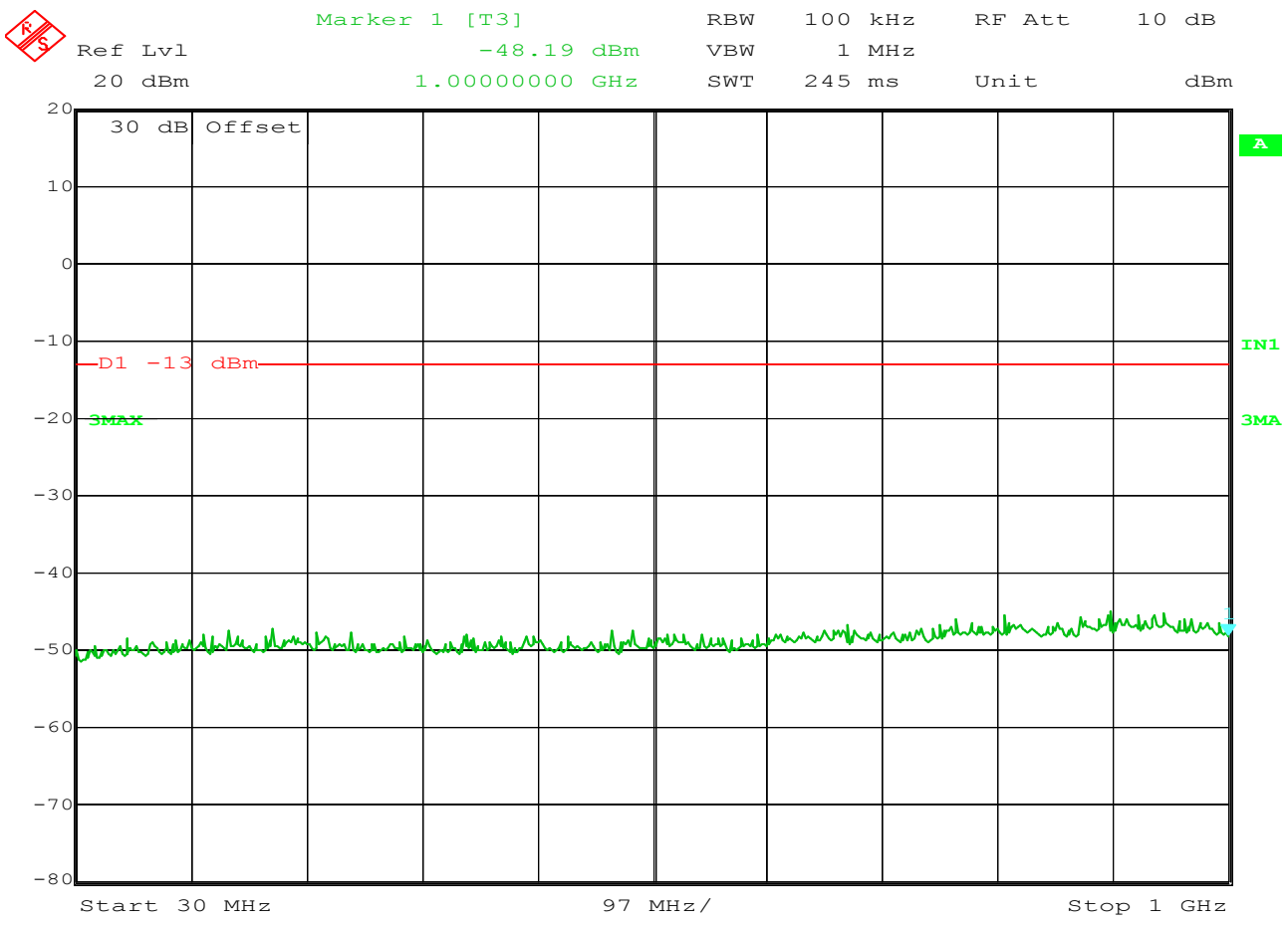
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : AMPS (FM)



Antenna Conducted Emissions

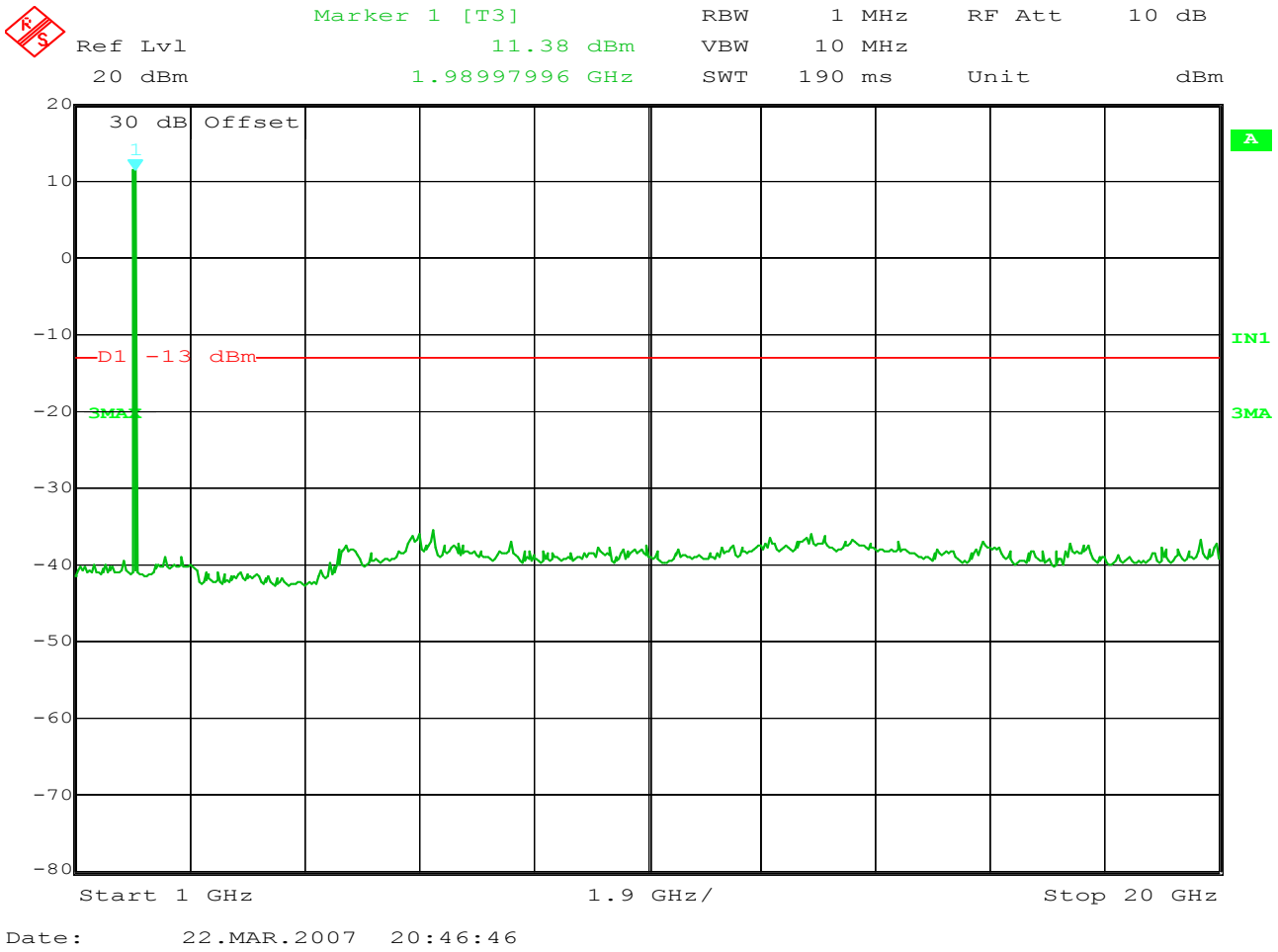
MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : AMPS (FM)



Date: 22.MAR.2007 20:42:49

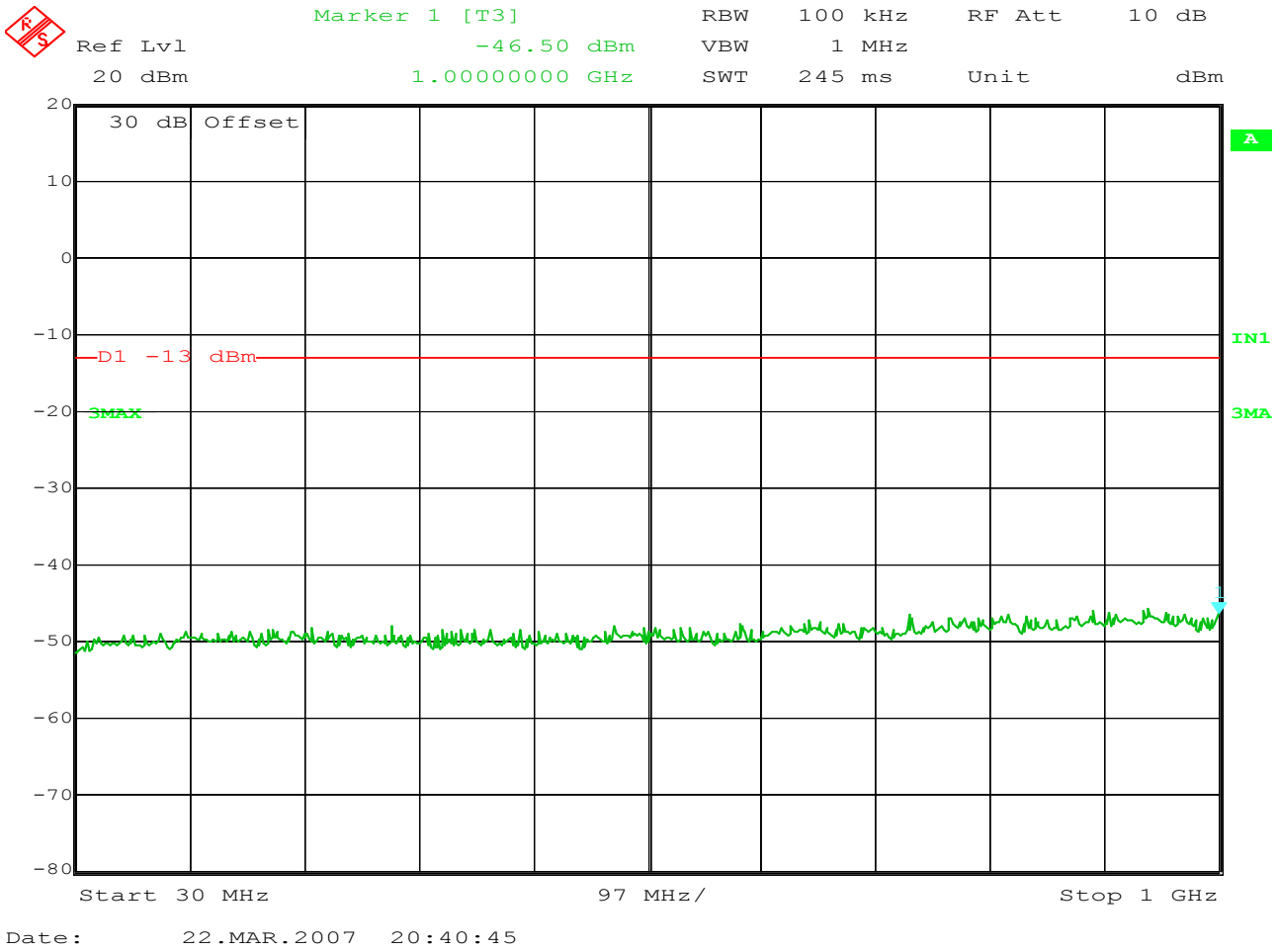
FCC 24 Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1988.77MHz
NOTES : CDMA



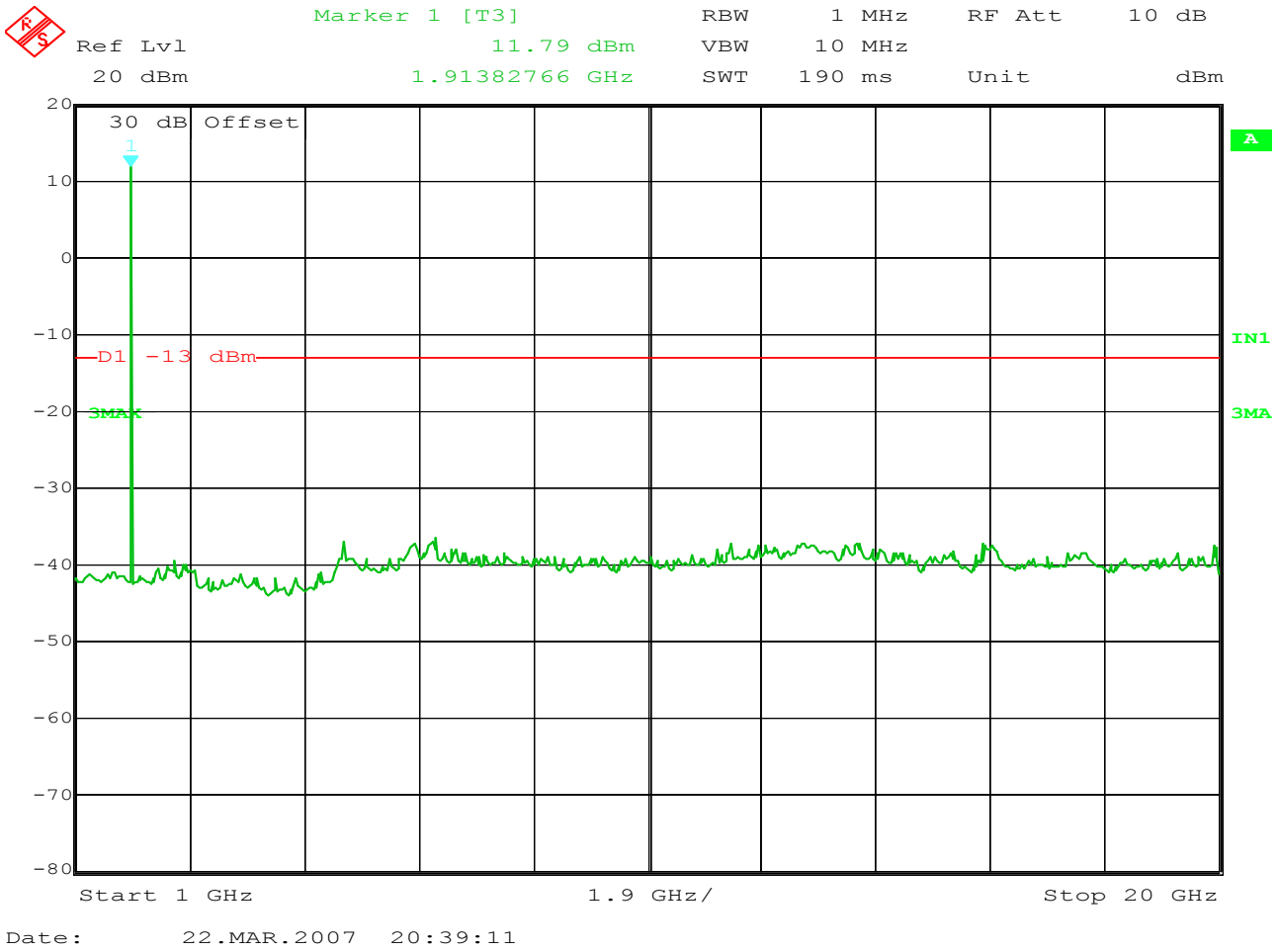
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1988.77MHz
NOTES : CDMA



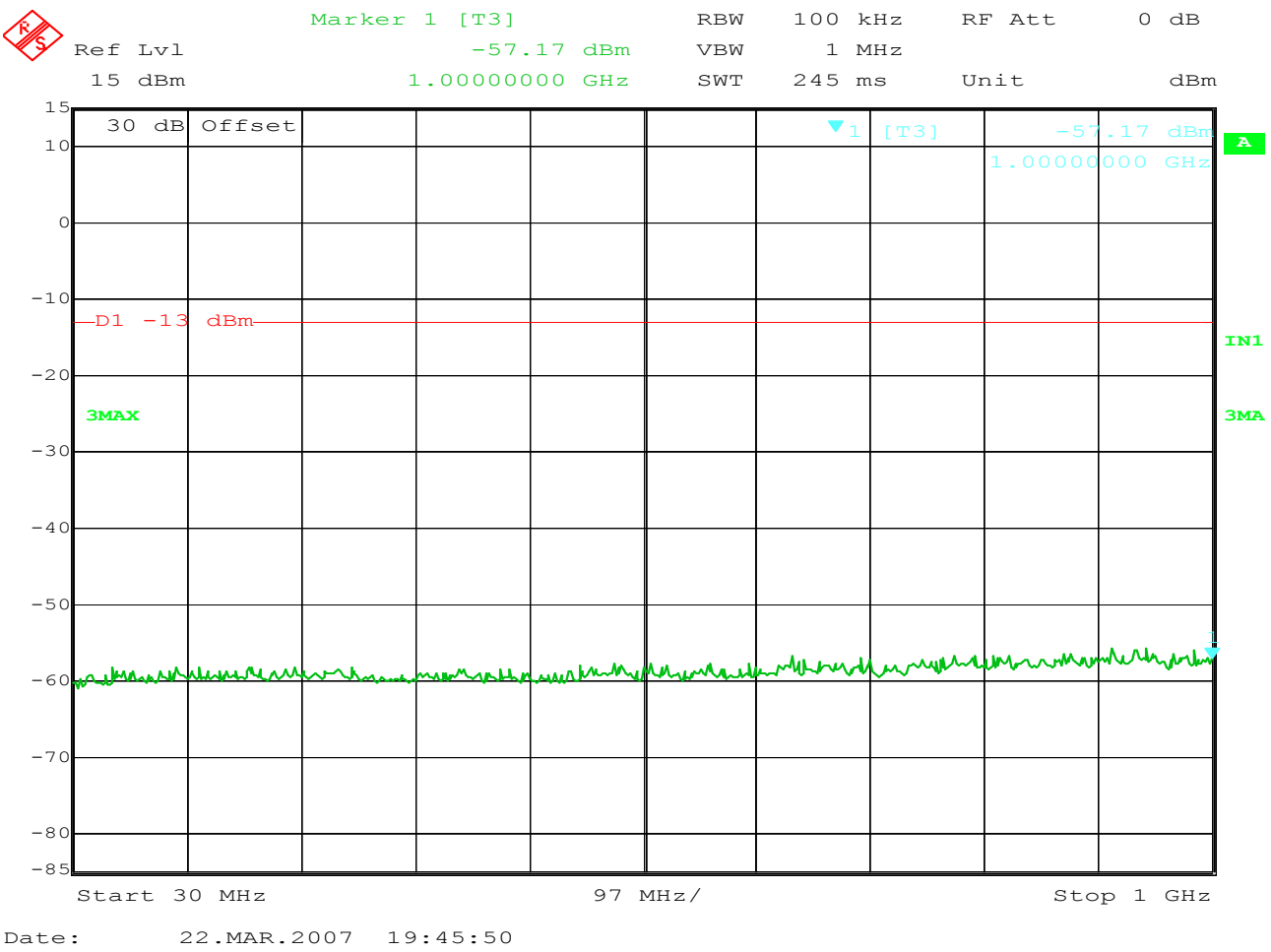
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1931.23MHz
NOTES : CDMA



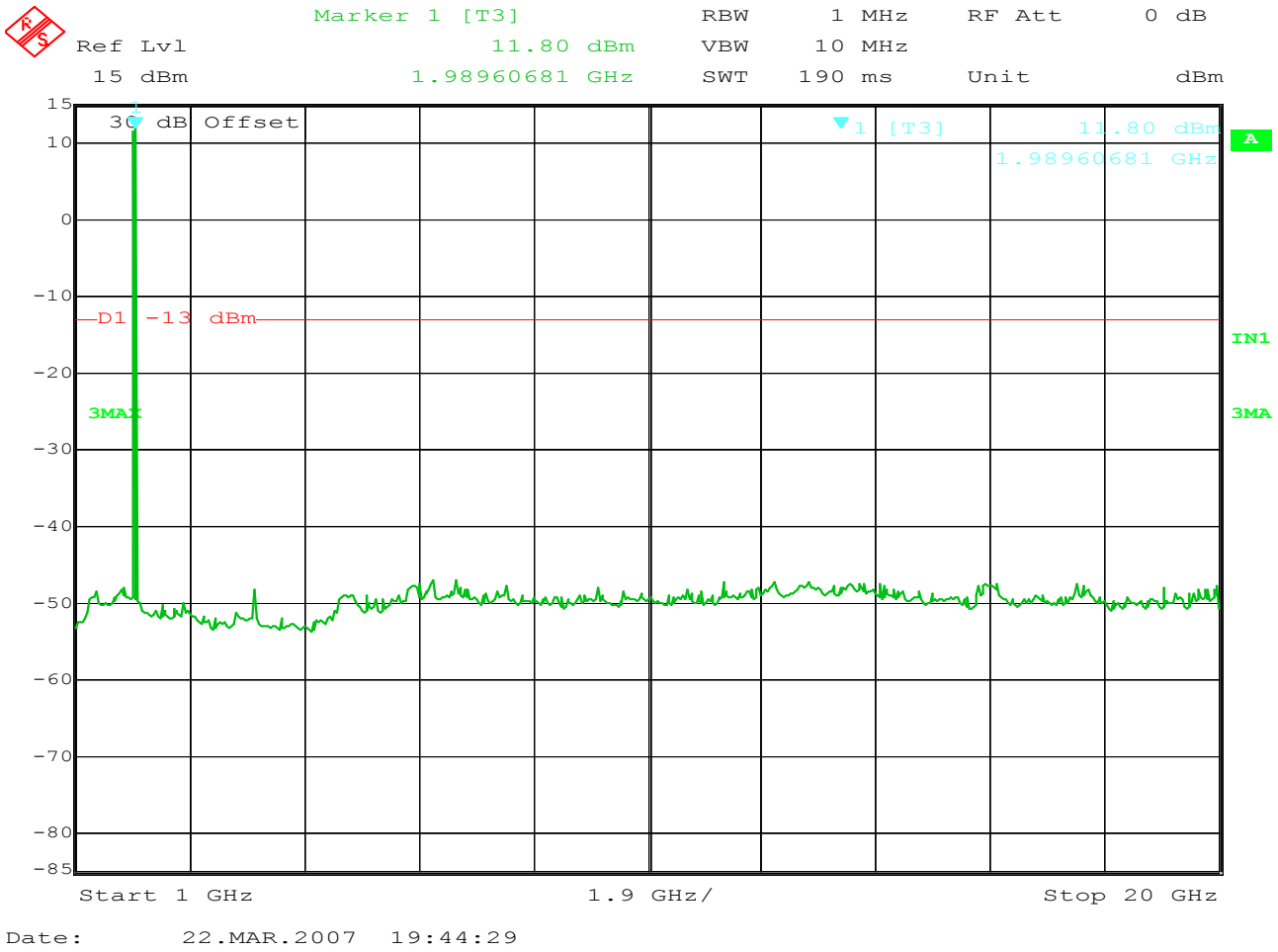
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1931.23MHz
NOTES : CDMA



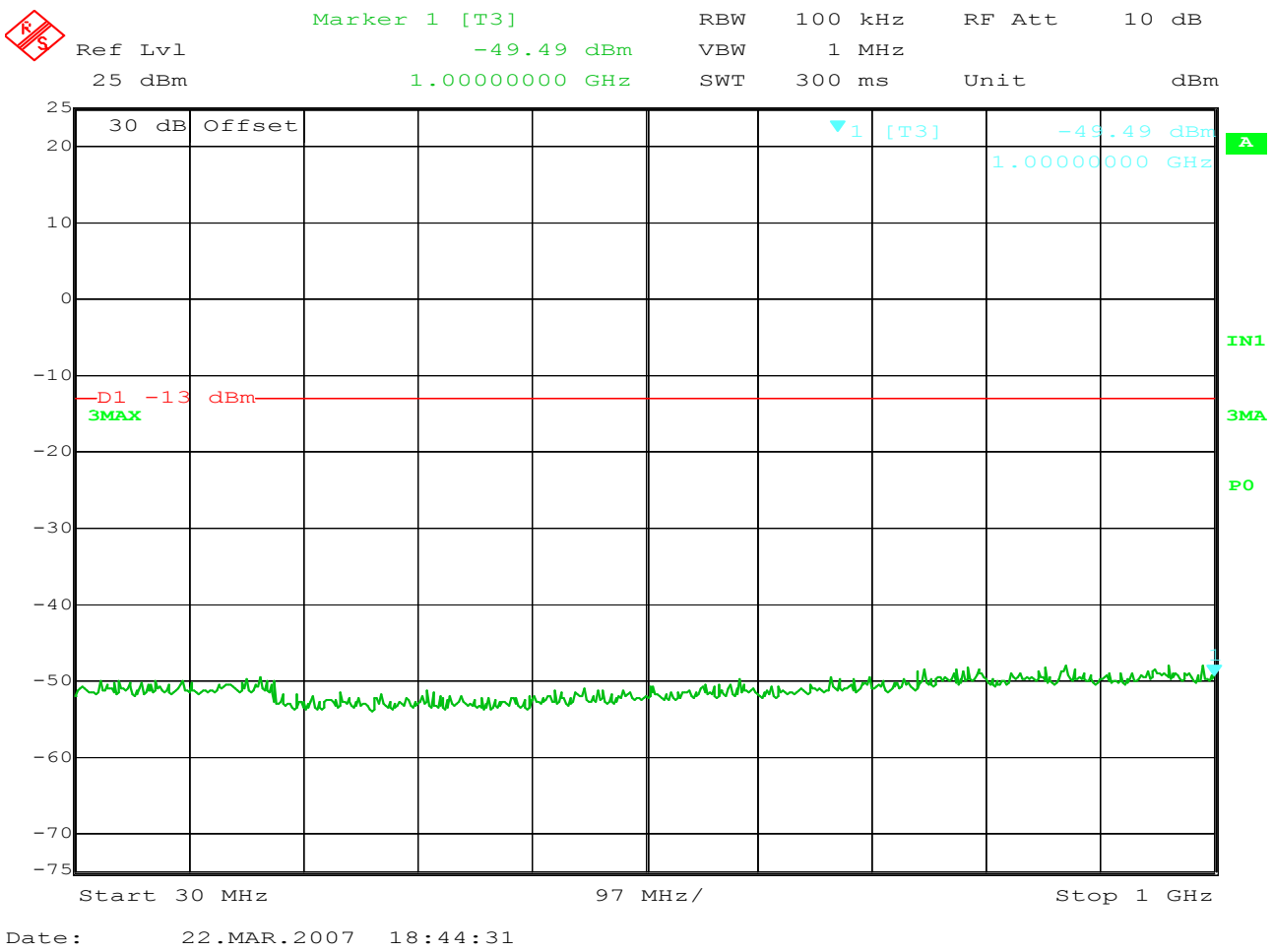
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.7MHz
NOTES : GSM



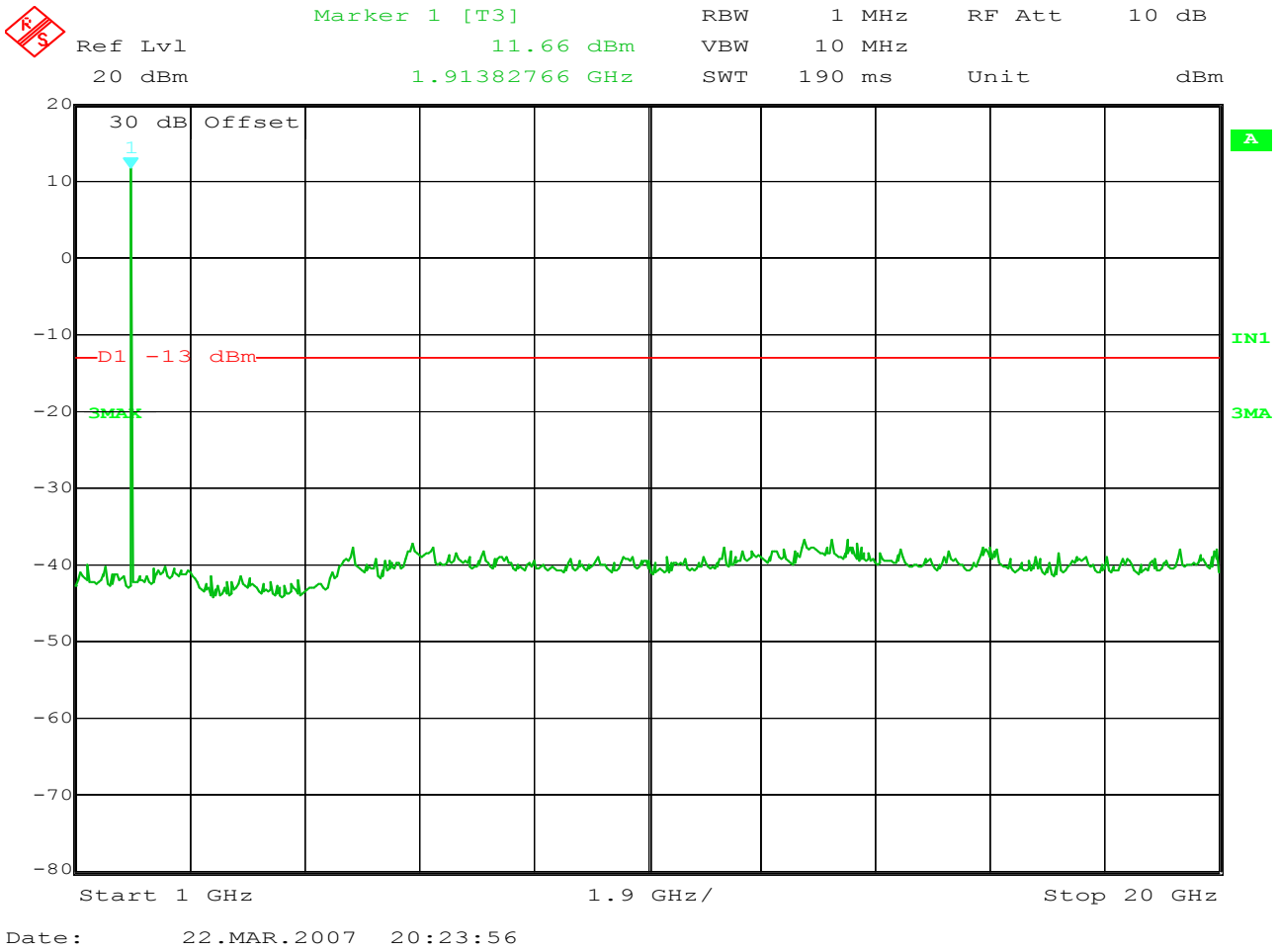
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.7MHz
NOTES : GSM



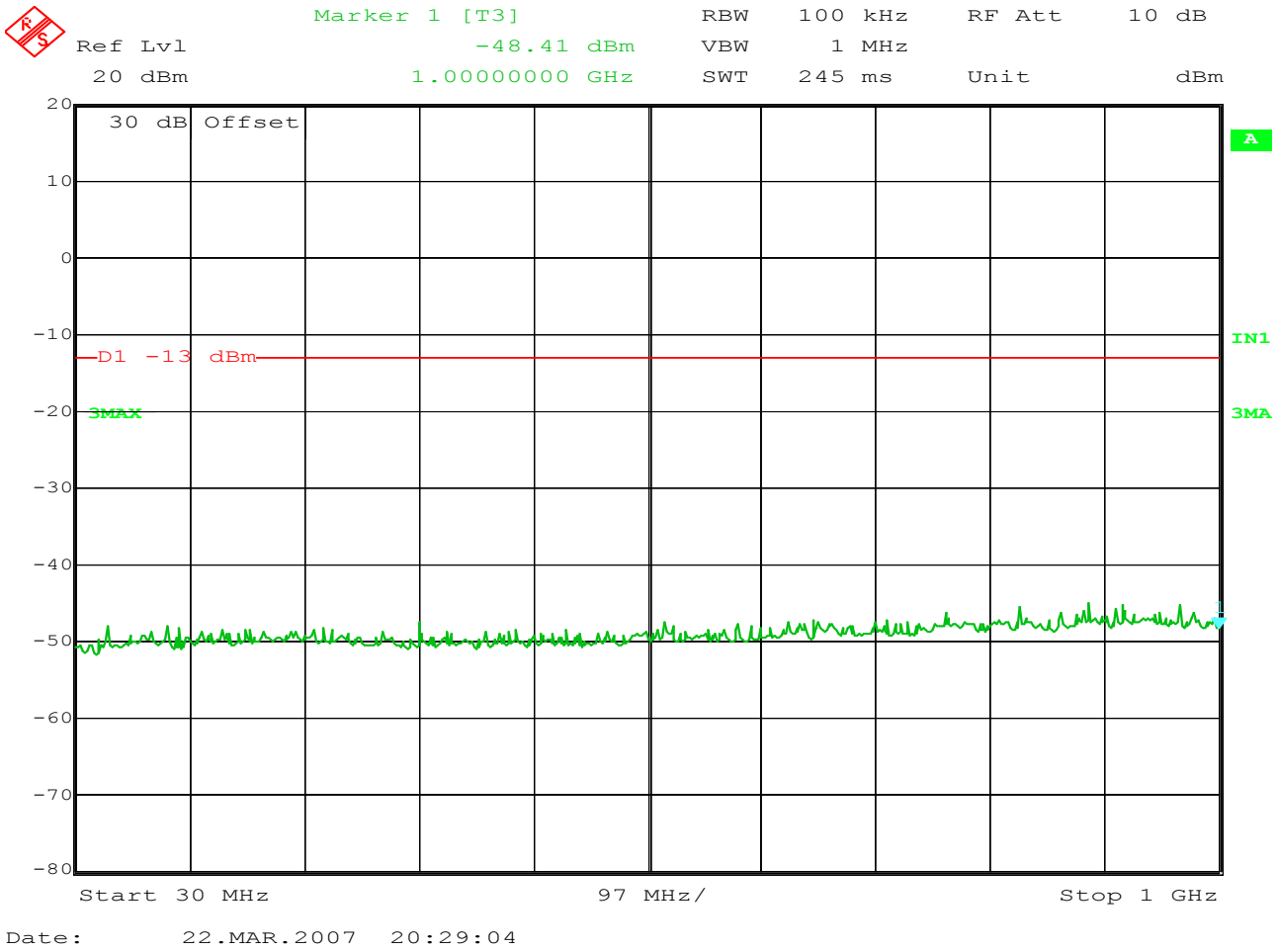
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.30MHz
NOTES : GSM
NOTES :



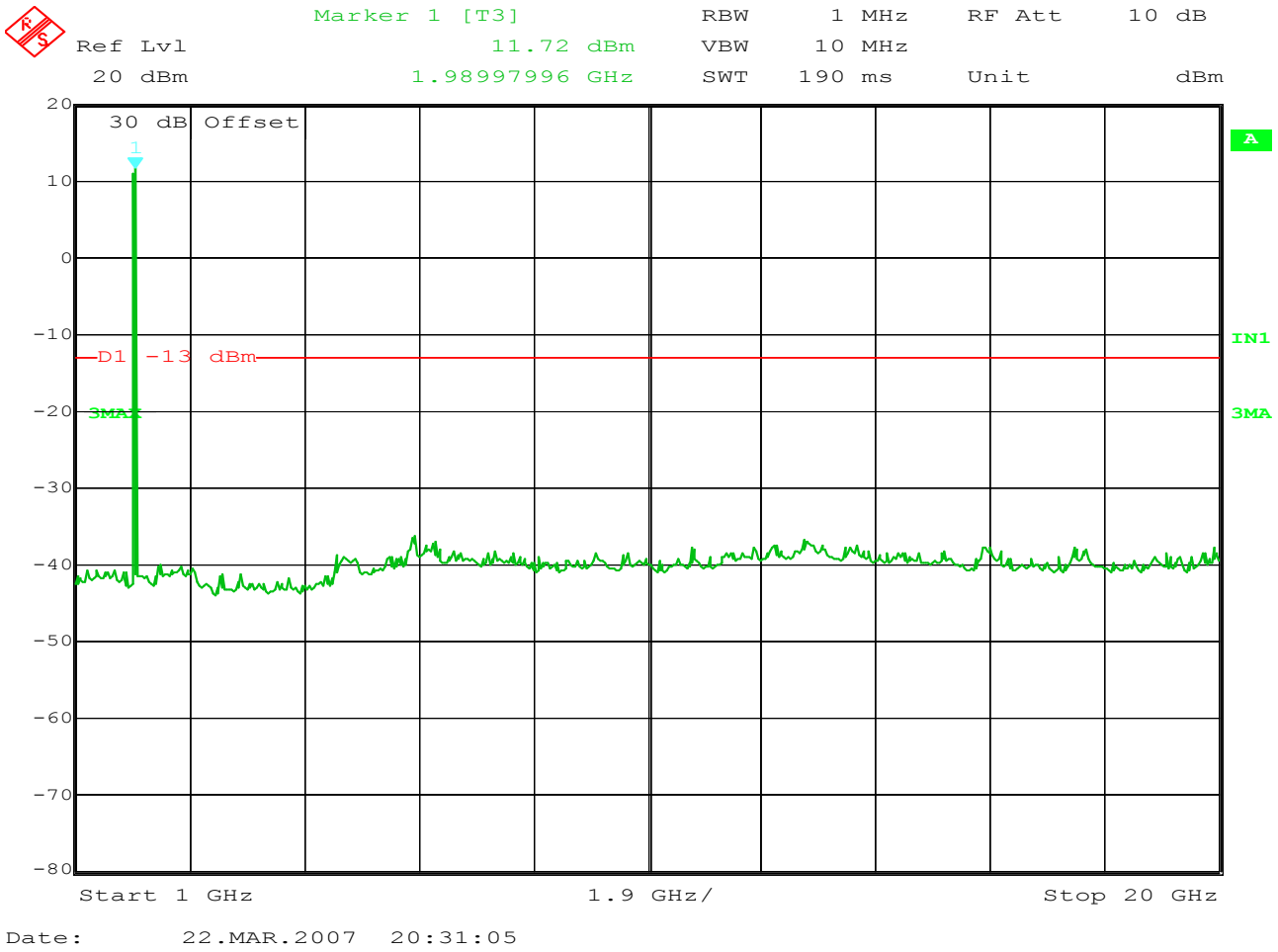
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.3MHz
NOTES : GSM



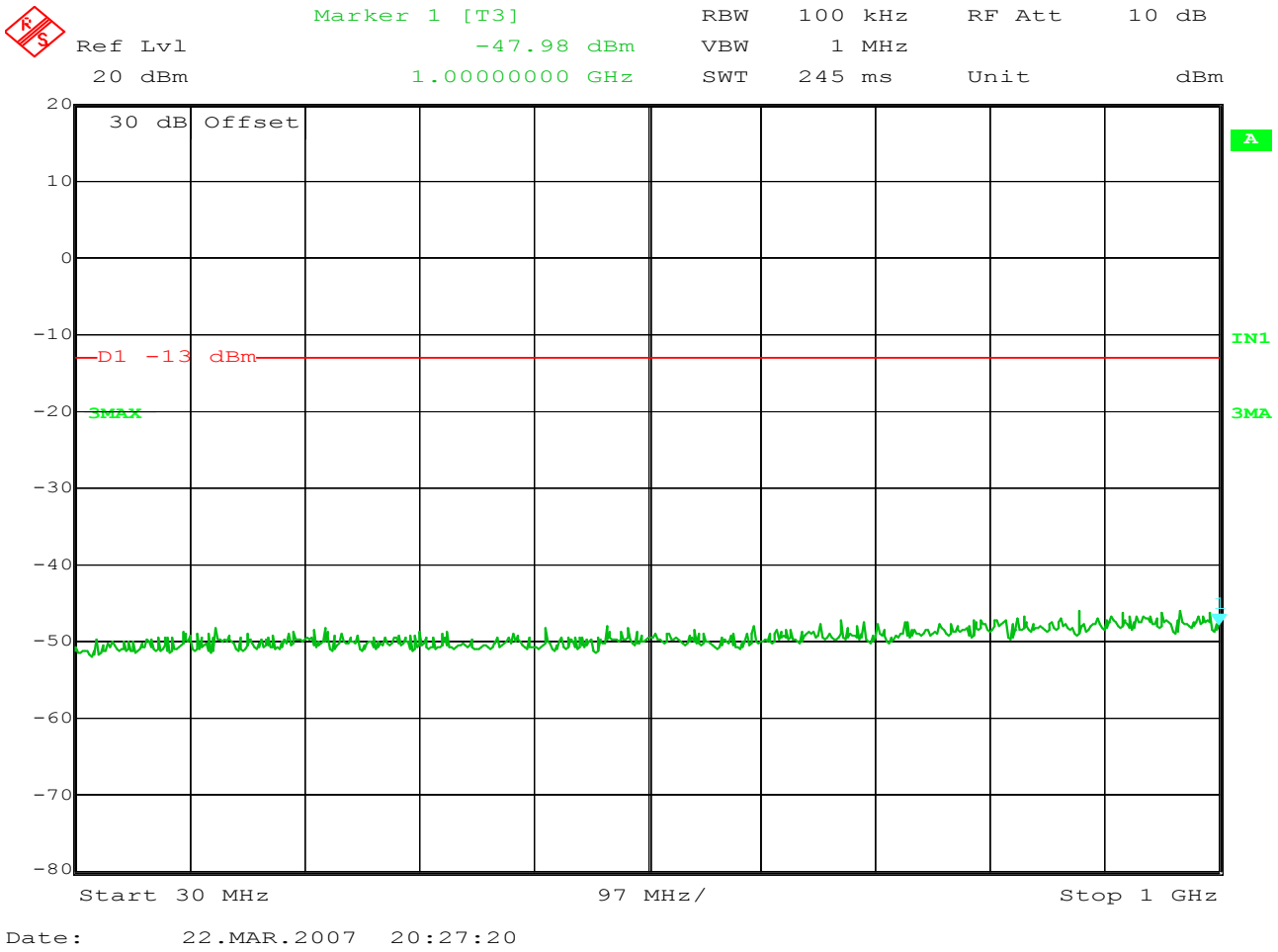
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : TDMA



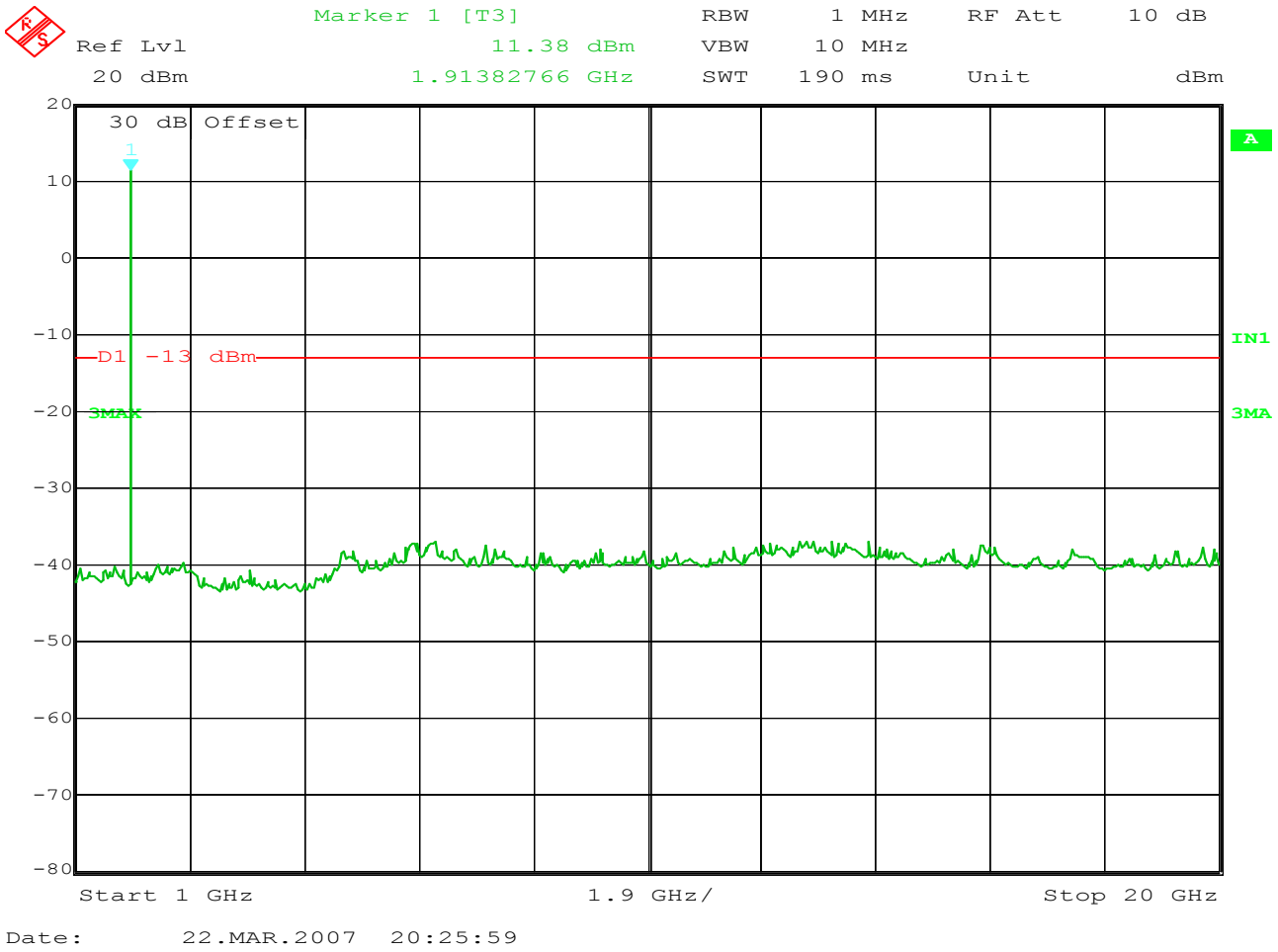
Antenna Conducted Emissions

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1989.97MHz
NOTES : TDMA



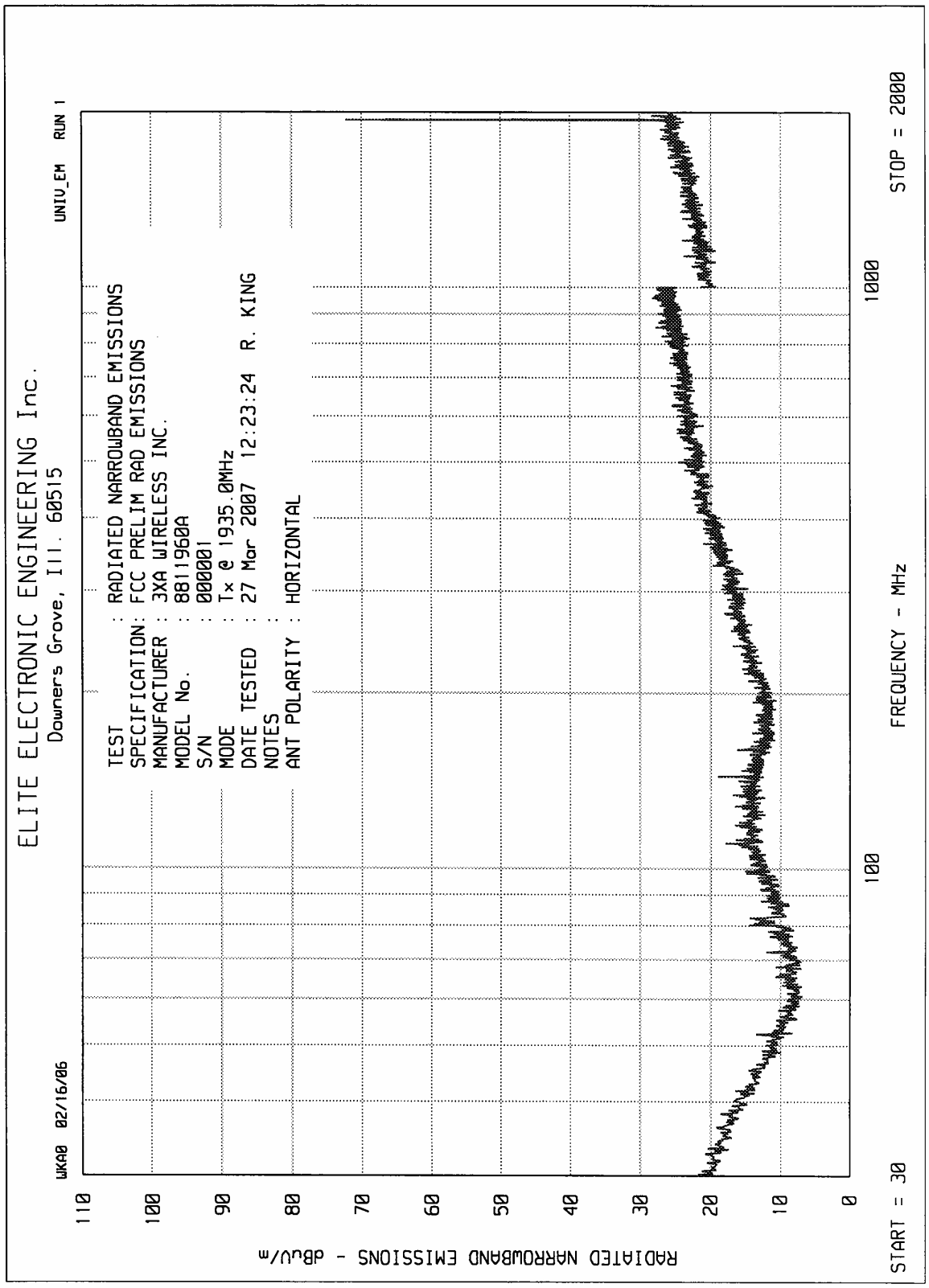
Antenna Conducted Emissions

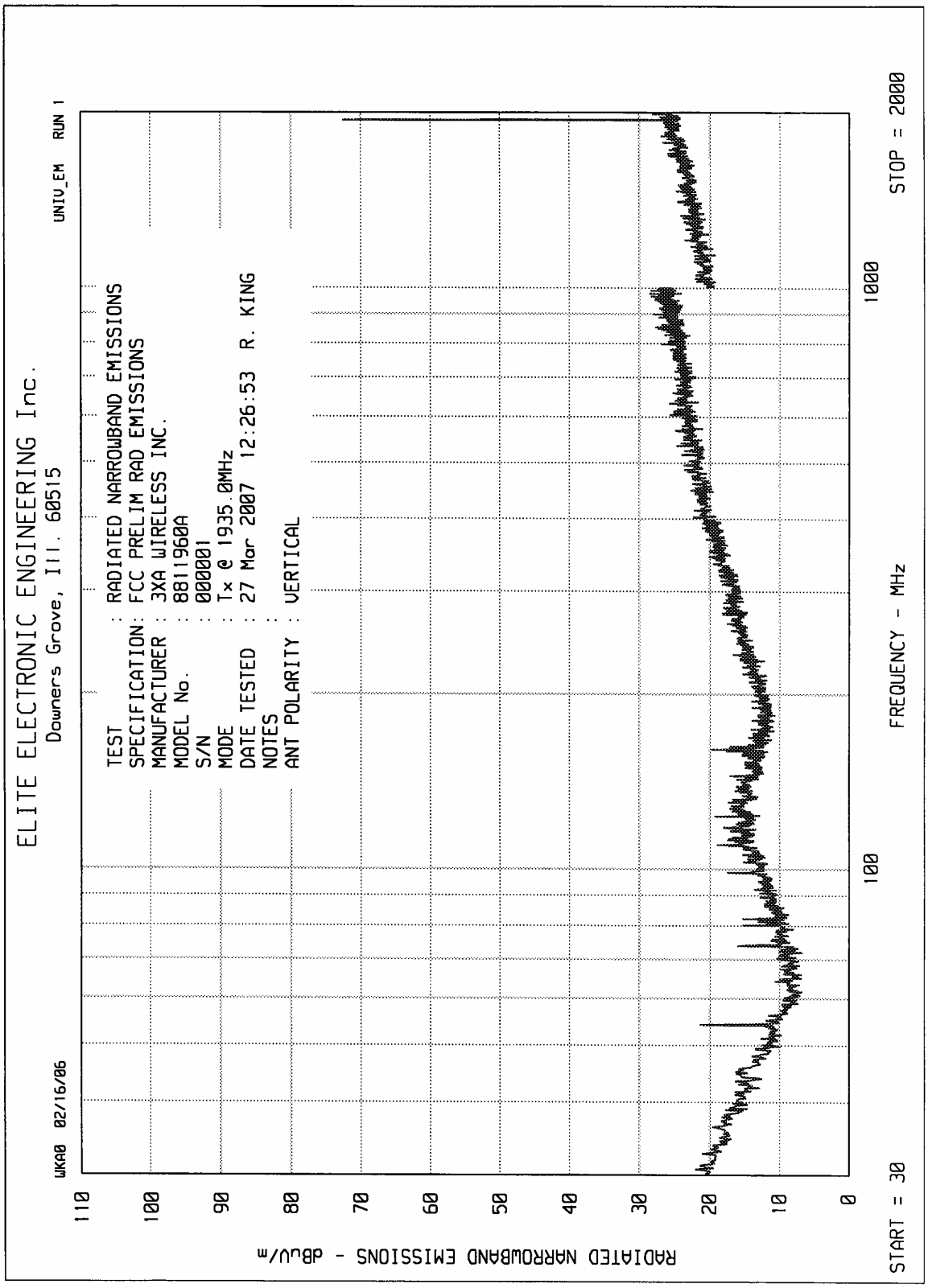
MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : TDMA

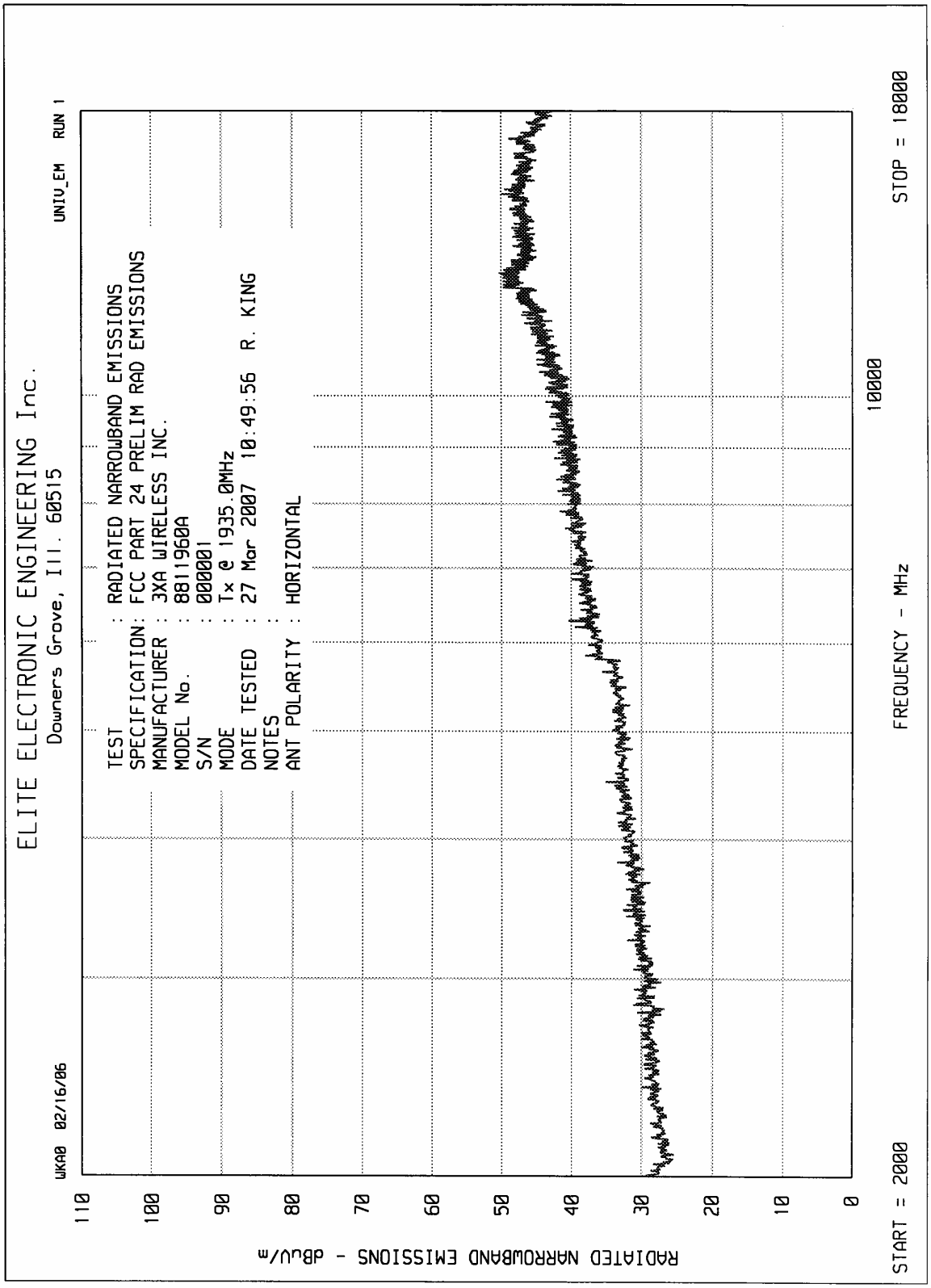


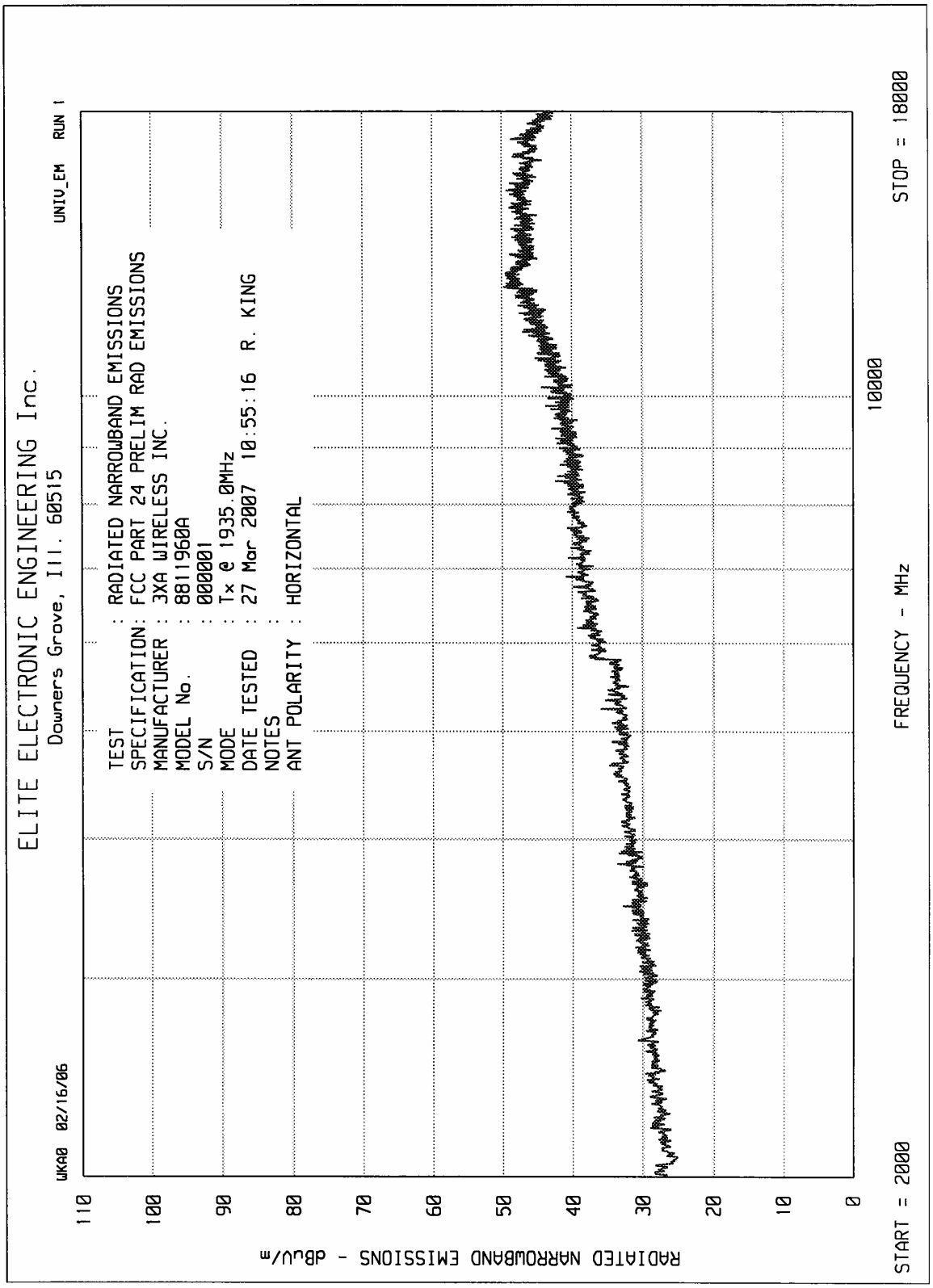
Antenna Conducted Emissions

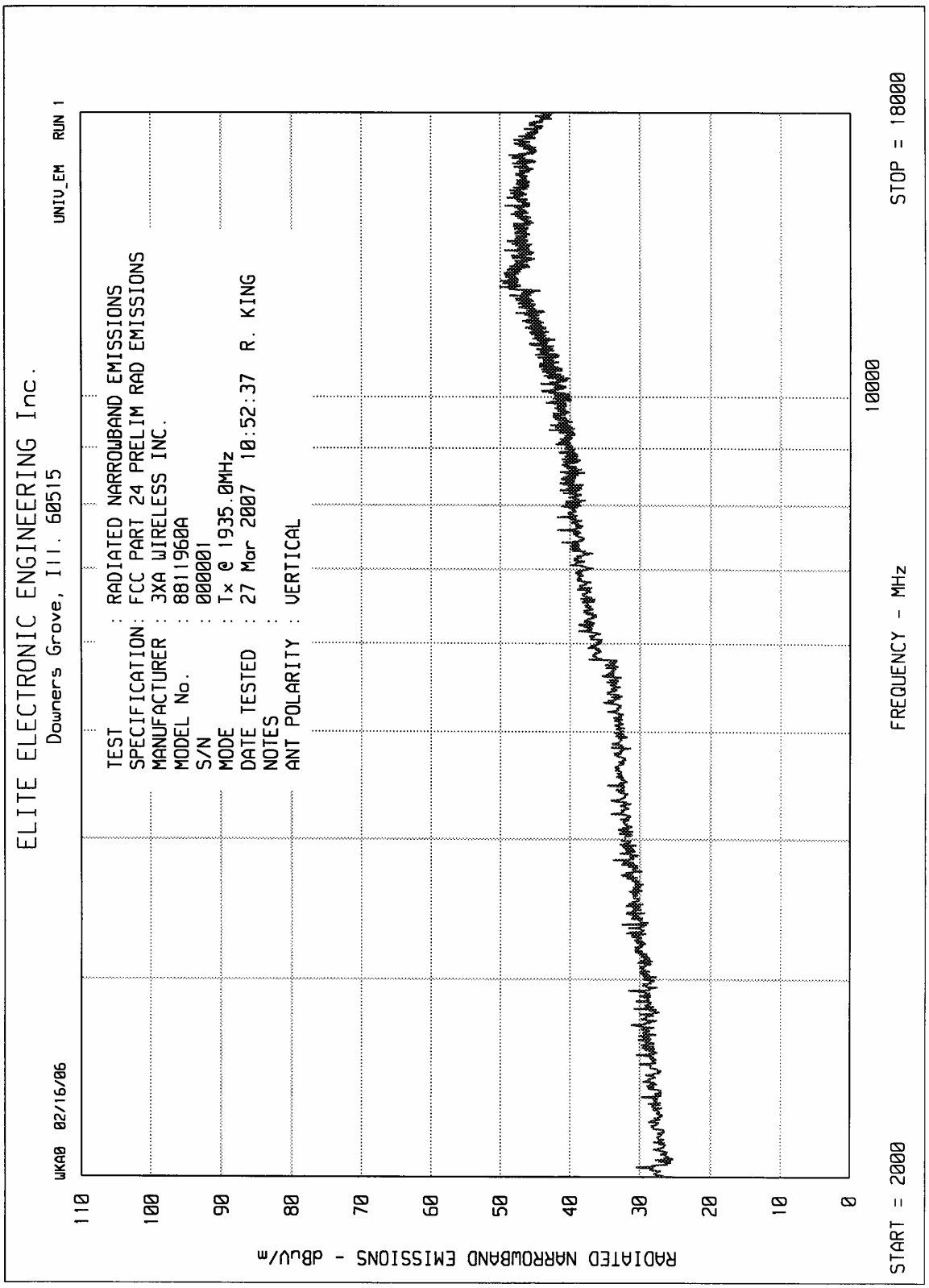
MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : 8811960A
MODEL NUMBER : 000001
TEST MODE : Tx @ 1930.03MHz
NOTES : TDMA

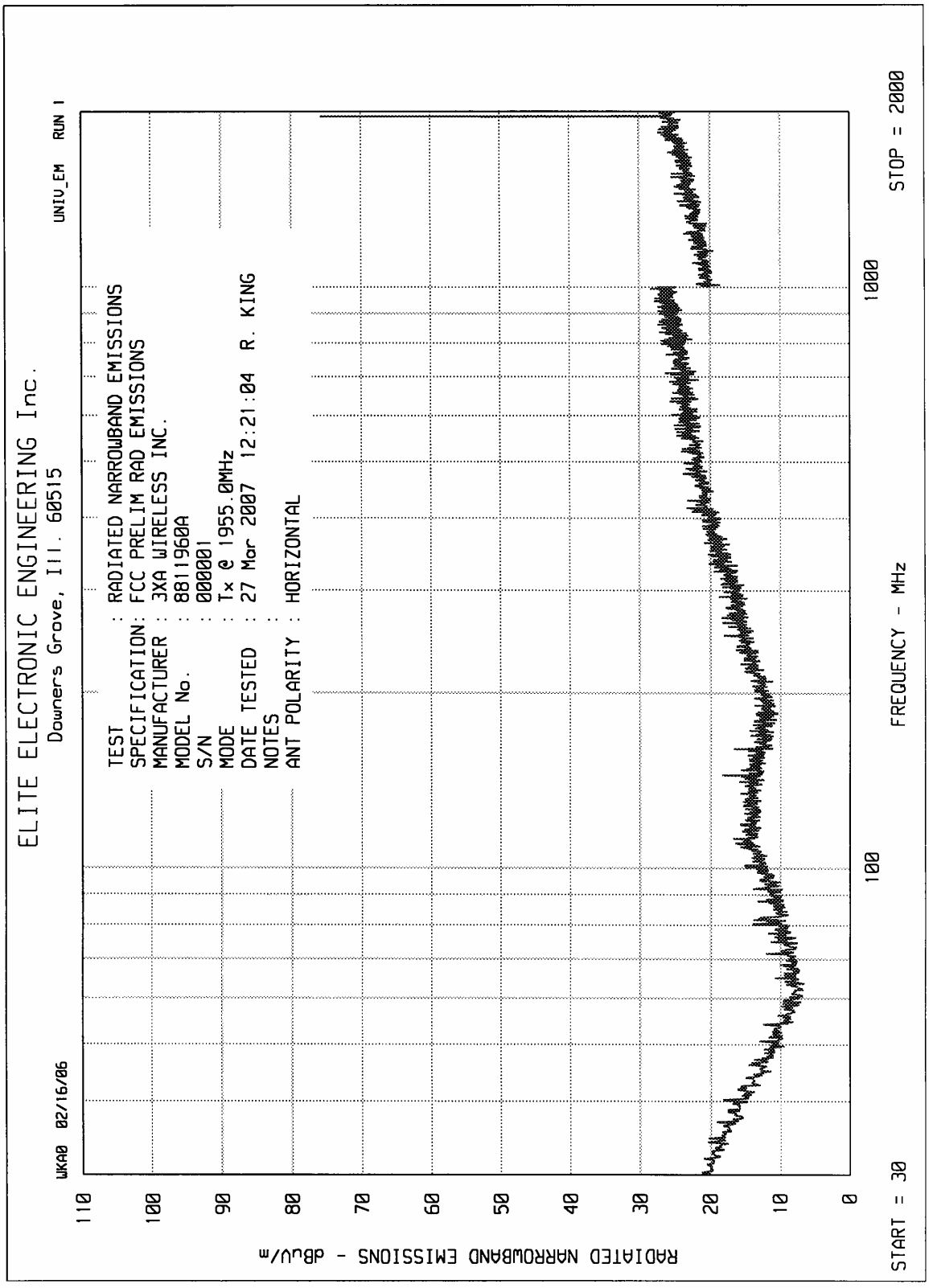

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1935.0MHz
DATE TESTED : 27 Mar 2007 12:23:24 R. KING
NOTES : :
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
1000
STOP = 2000
FREQUENCY - MHz

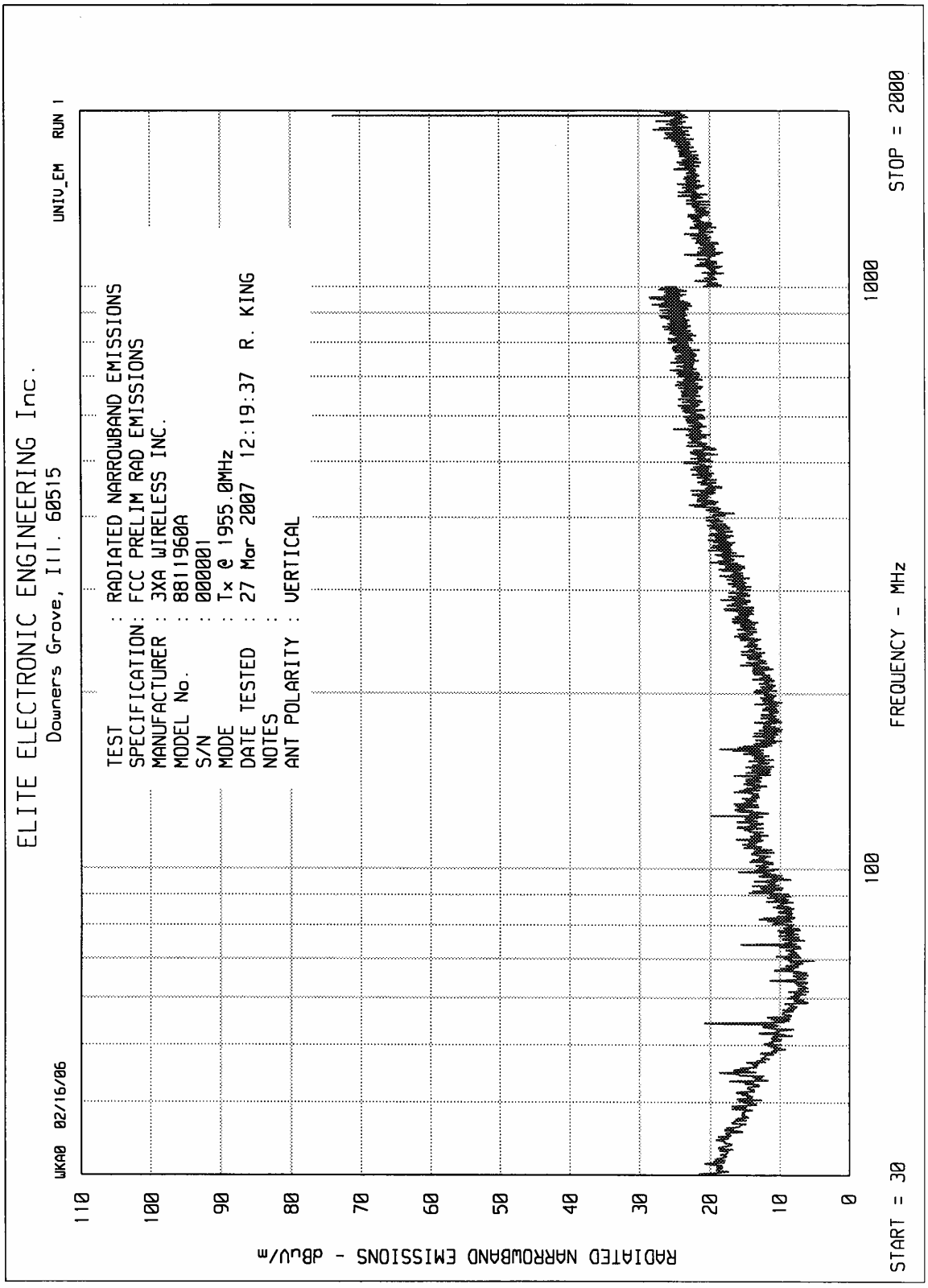

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1935.0MHz
DATE TESTED : 27 Mar 2007 12:26:53 R. KING
NOTES :
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
1000
STOP = 2000
FREQUENCY - MHz

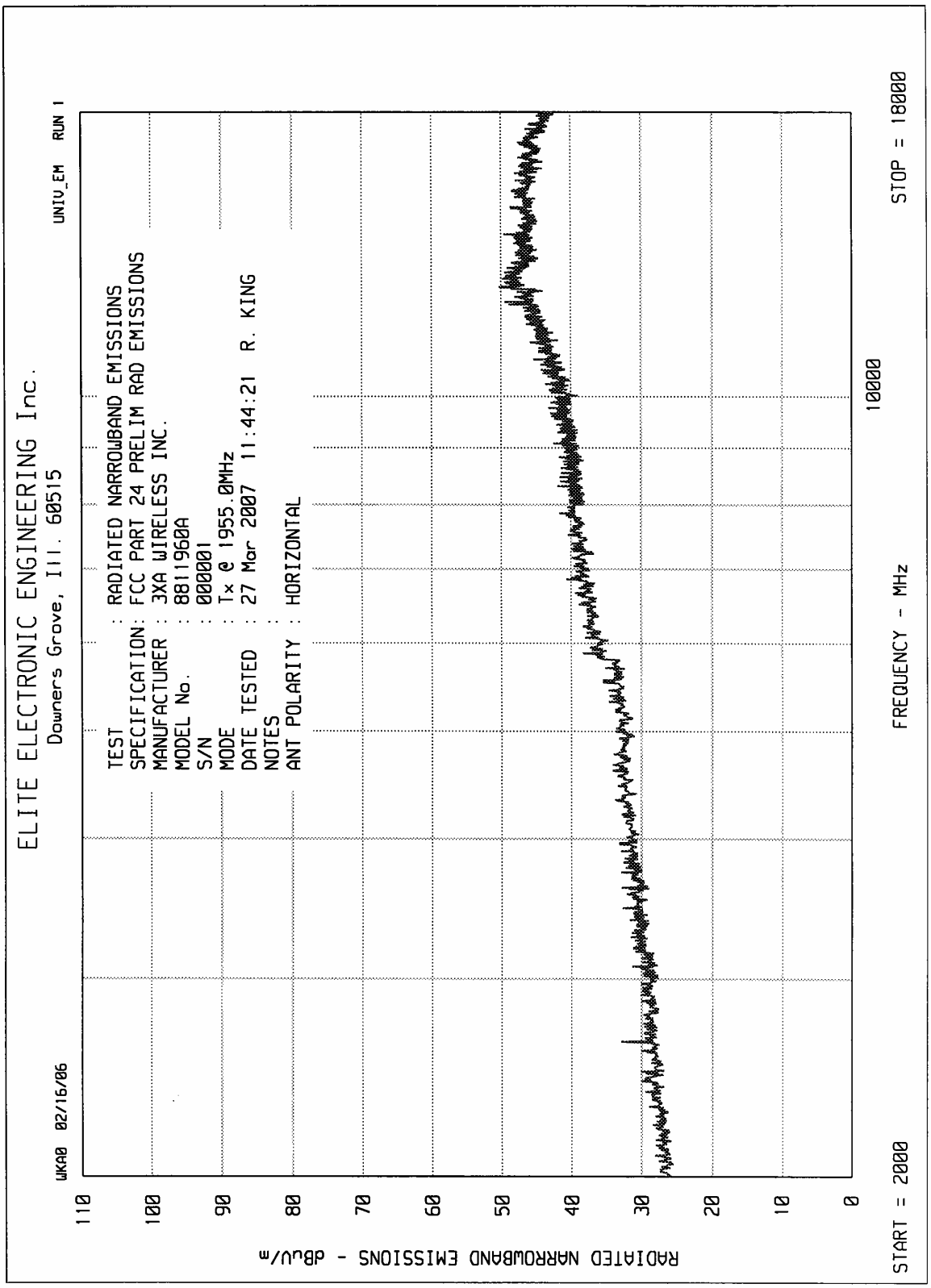

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PART 24 PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1935.0MHz
DATE TESTED : 27 Mar 2007 10:49:56 R. KING
NOTES :
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 2000
10000
STOP = 18000
FREQUENCY - MHz

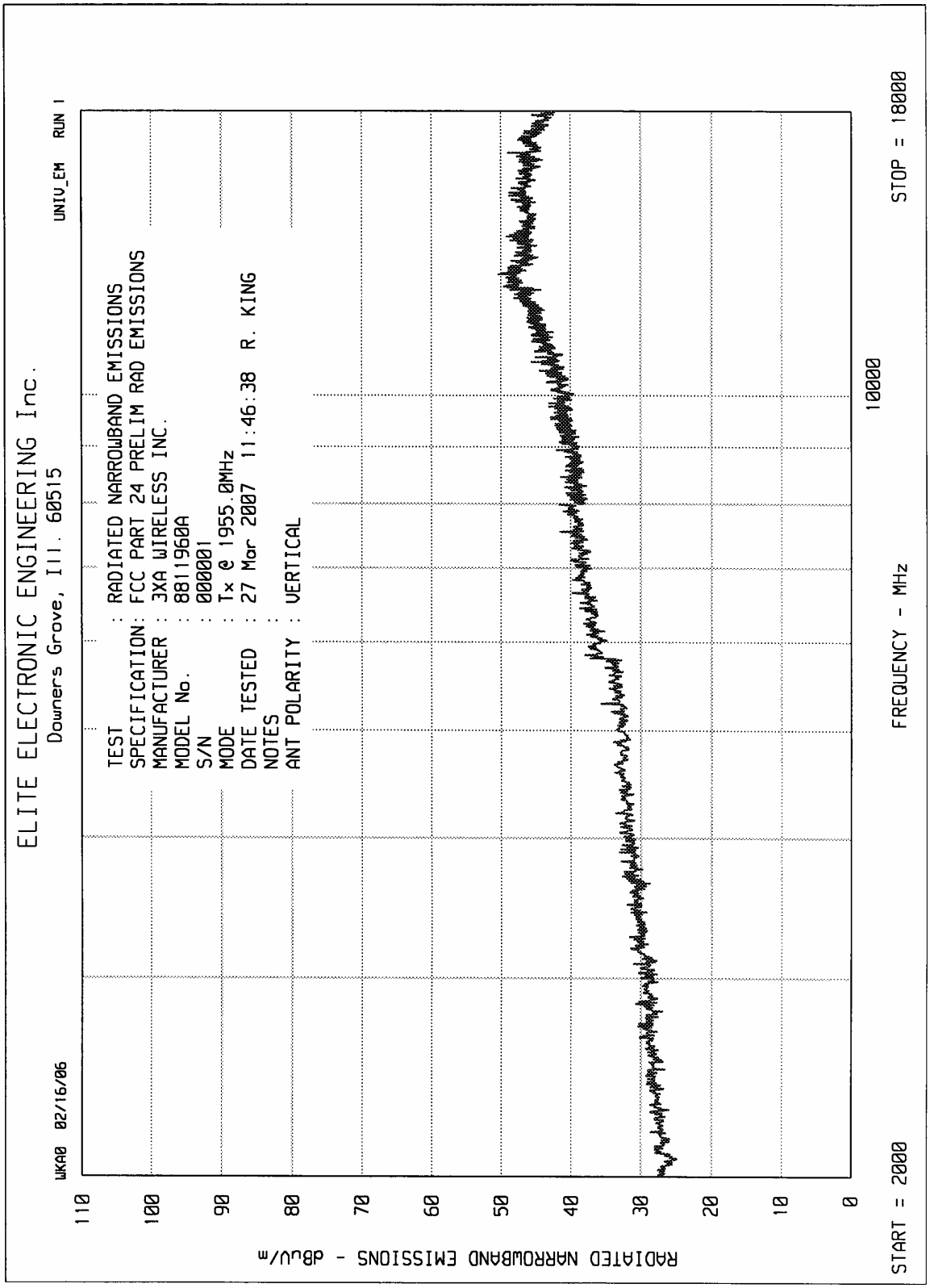

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
UKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PART 24 PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1935.0MHz
DATE TESTED : 27 Mar 2007 10:55:16 R. KING
NOTES : :
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 2000
10000
STOP = 18000
FREQUENCY - MHz

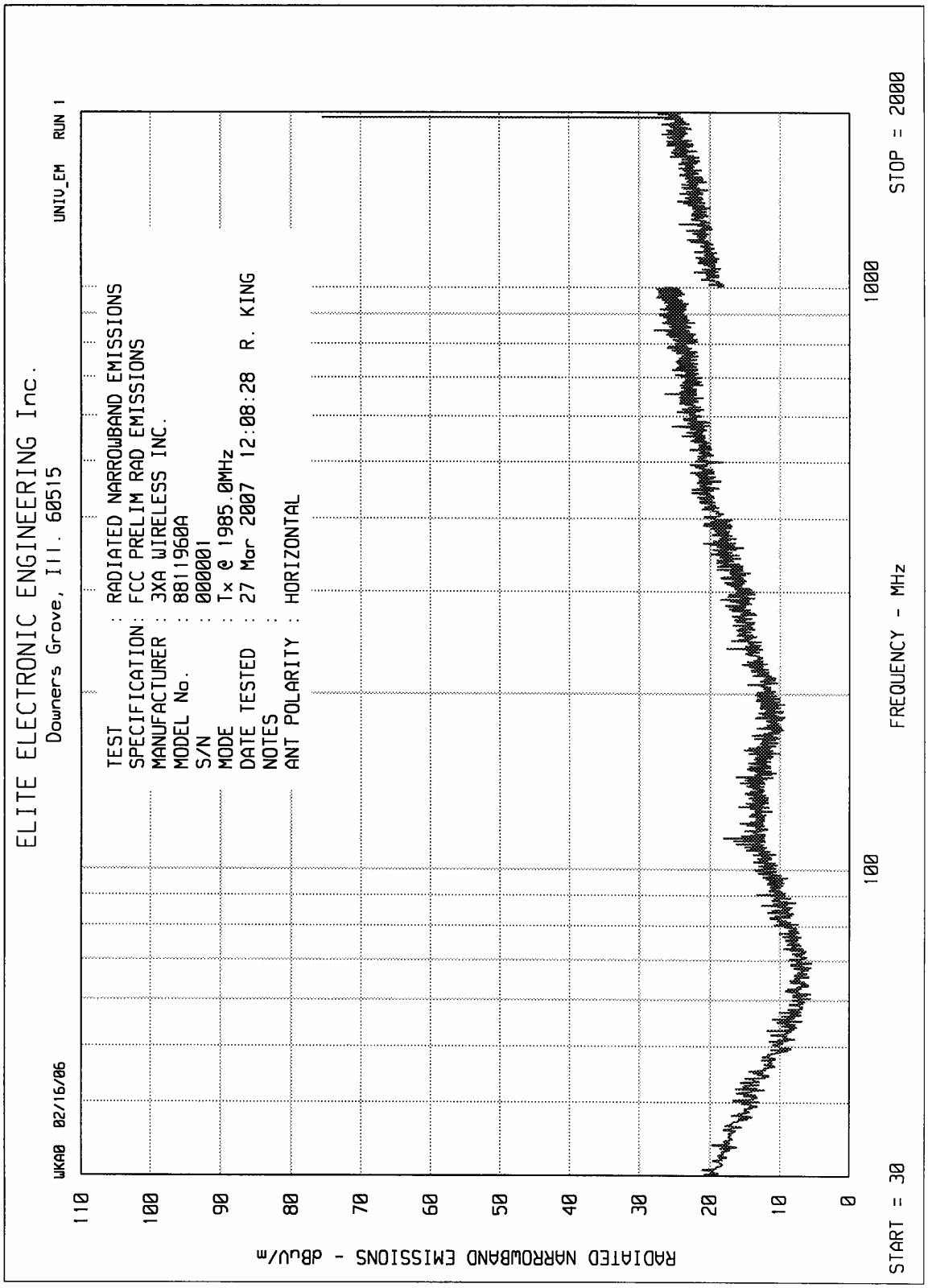

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PART 24 PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1935.0MHz
DATE TESTED : 27 Mar 2007 10:52:37 R. KING
NOTES : :
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 2000
10000
STOP = 18000
FREQUENCY - MHz

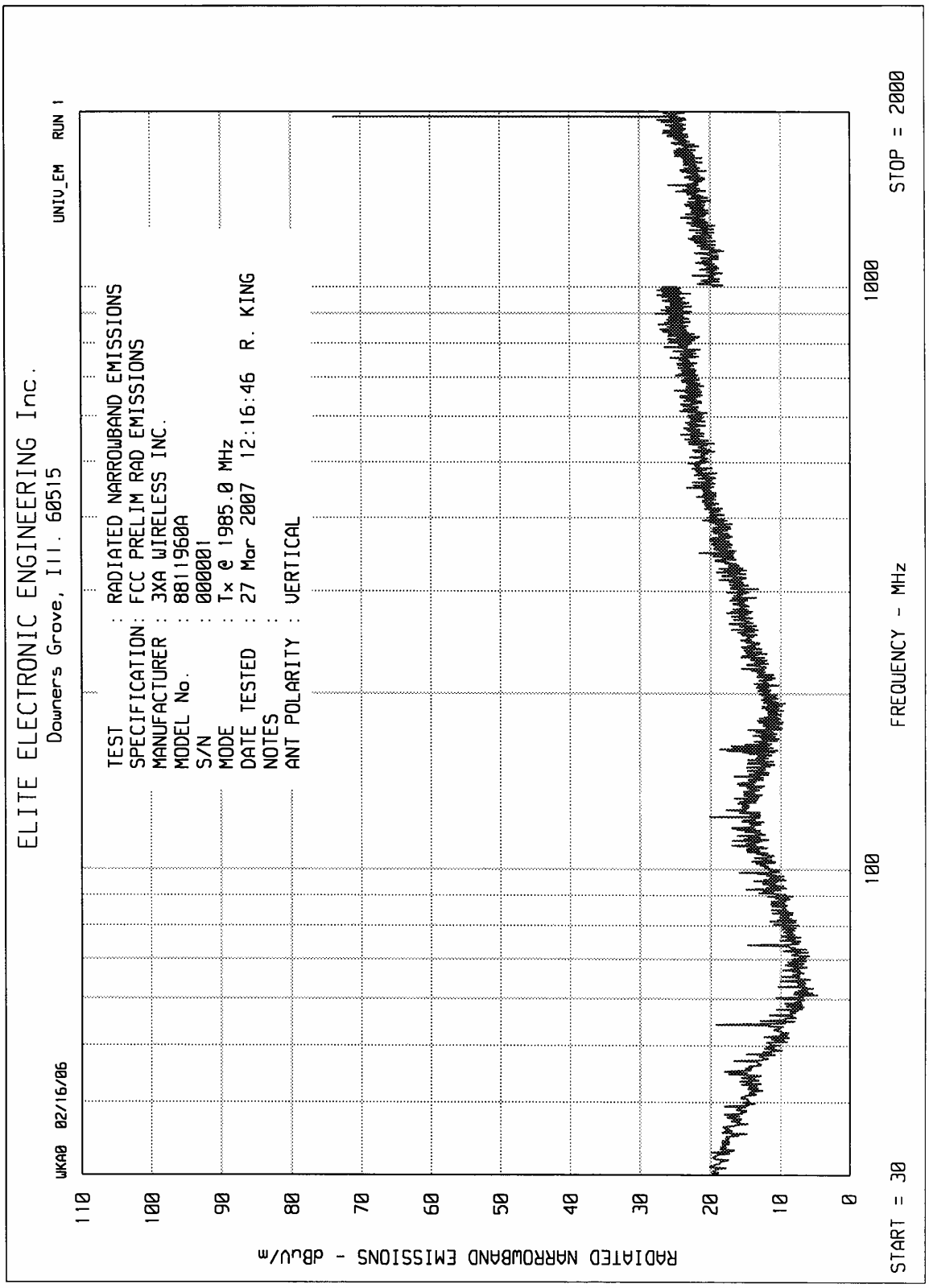

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1955.0MHz
DATE TESTED : 27 Mar 2007 12:21:04 R. KING
NOTES :
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
1000
STOP = 2000
FREQUENCY - MHz

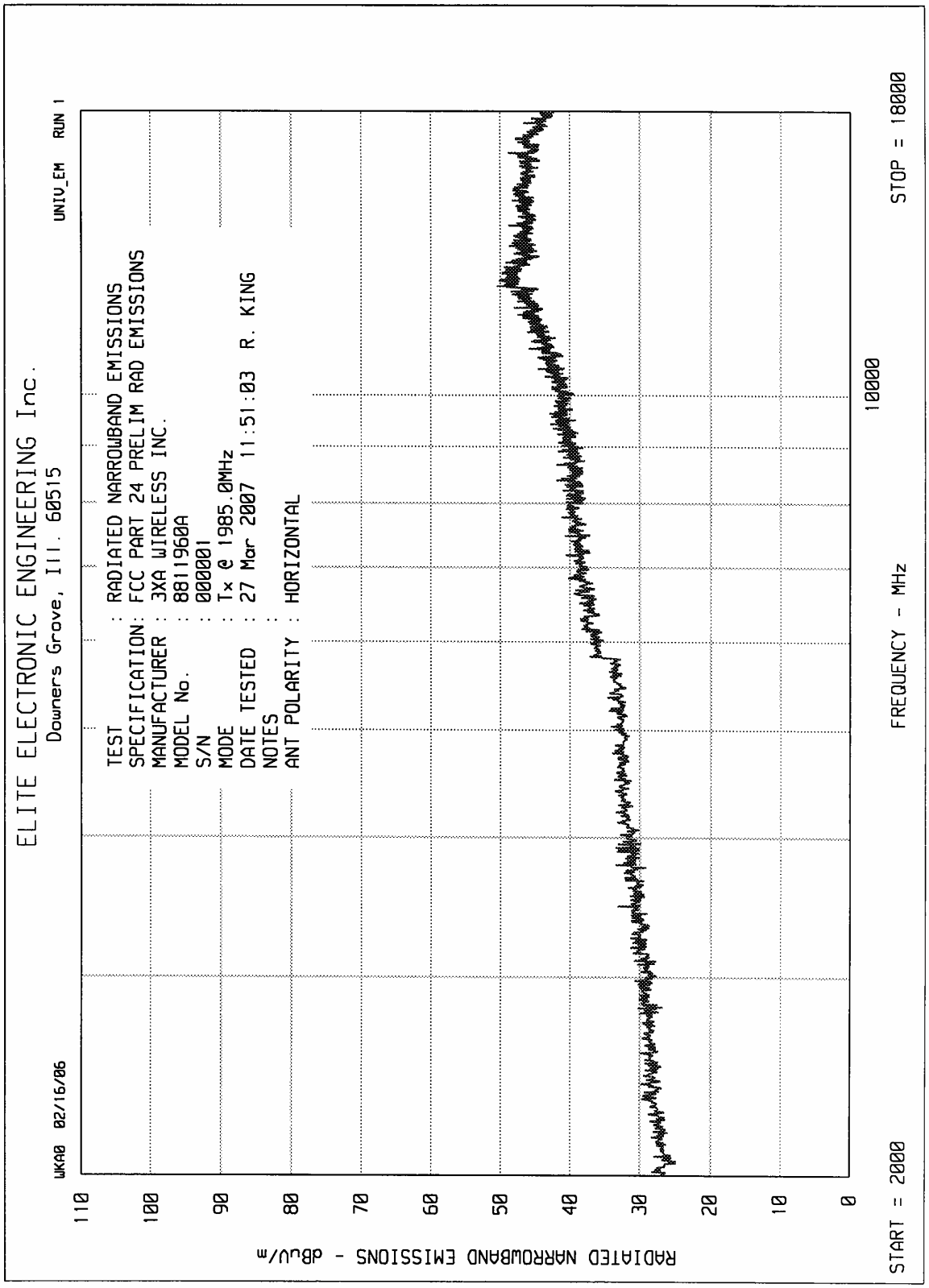

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1955.0MHz
DATE TESTED : 27 Mar 2007 12:19:37 R. KING
NOTES :
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
1000
STOP = 2000
FREQUENCY - MHz

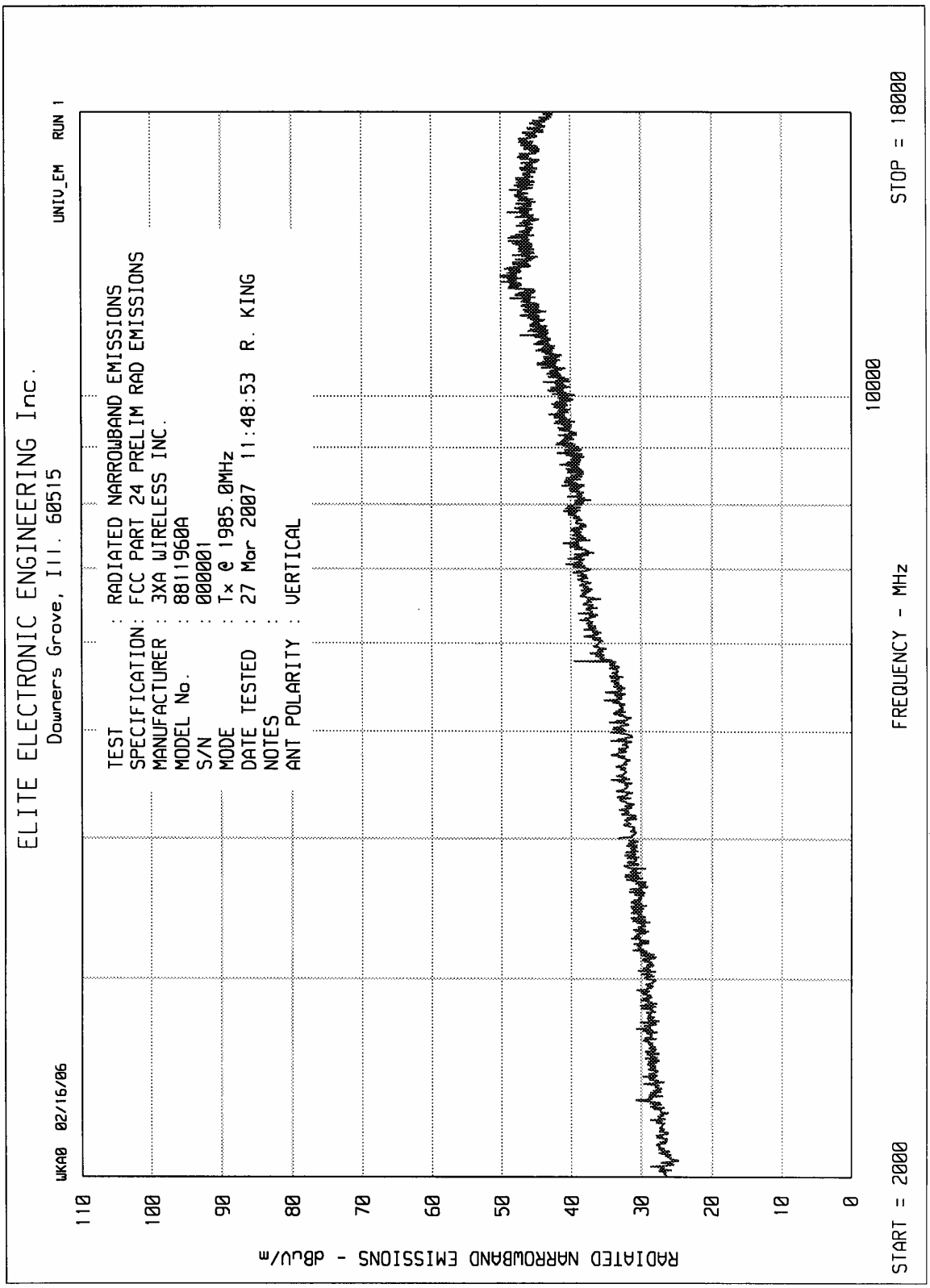

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PART 24 PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1955.0MHz
DATE TESTED : 27 Mar 2007 11:44:21 R. KING
NOTES : :
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 2000
10000
STOP = 18000
FREQUENCY - MHz


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PART 24 PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1955.0MHz
DATE TESTED : 27 Mar 2007 11:46:38 R. KING
NOTES :
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 2000
10000
STOP = 18000
FREQUENCY - MHz


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1985.0MHz
DATE TESTED : 27 Mar 2007 12:08:28 R. KING
NOTES :
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
1000
STOP = 2000
FREQUENCY - MHz


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 881196QA
S/N : 000001
MODE : Tx @ 1985.0 MHz
DATE TESTED : 27 Mar 2007 12:16:46 R. KING
NOTES :
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
1000
STOP = 2000
FREQUENCY - MHz


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PART 24 PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1985.0MHz
DATE TESTED : 27 Mar 2007 11:51:03 R. KING
NOTES :
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 2000
10000
STOP = 18000
FREQUENCY - MHz


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: FCC PART 24 PRELIM RAD EMISSIONS
MANUFACTURER : 3XA WIRELESS INC.
MODEL No. : 8811960A
S/N : 000001
MODE : Tx @ 1985.0MHz
DATE TESTED : 27 Mar 2007 11:48:53 R. KING
NOTES :
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 2000
10000
STOP = 18000
FREQUENCY - MHz

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : Dualband Wireless Amp
MODEL NUMBER : 8811960A
TEST MODE : Transmit @ 1935.0 MHz
NOTES : Test distance is 3 meters.
NOTES : ERP Total = Matched Sig. Gen. level + Antenna gain – cable loss

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	Matched SIG. GEN. (dB)	Equivalent Ant Gain (dB)	CBL (dB)	ERP Total (dBm)	Attenuation	Minimum Attenuation
3870.0	H	39.6	*	-67.5	12.7	3.9	-58.7	70.7	25.0
3870.0	V	41.8		-58.5	12.7	3.9	-49.7	61.7	25.0
5805.0	H	40.9	*	-65.9	13.2	4.9	-57.6	69.6	25.0
5805.0	V	40.5	*	-62.3	13.2	4.9	-54.0	66.0	25.0
7740.0	H	40.0	*	-62.3	13.6	5.7	-54.4	66.4	25.0
7740.0	V	40.0	*	-61.1	13.6	5.7	-53.2	65.2	25.0
9675.0	H	40.8	*	-61.1	14.9	6.4	-52.6	64.6	25.0
9675.0	V	40.7	*	-63.4	14.9	6.4	-54.9	66.9	25.0
11610.0	H	43.5	*	-63.4	13.8	7.1	-56.7	68.7	25.0
11610.0	V	44.0	*	-60.2	13.8	7.1	-53.5	65.5	25.0
13545.0	H	42.6	*	-60.2	14.8	7.8	-53.2	65.2	25.0
13545.0	V	42.9	*	-60.2	14.8	7.8	-53.2	65.2	25.0
15480.0	H	41.7	*	-48.5	15.1	8.9	-42.3	54.3	25.0
15480.0	V	42.3	*	-48.5	15.1	8.9	-42.3	54.3	25.0
17415.0	H	41.8	*	-42.8	14.7	10.1	-38.2	50.2	25.0
17415.0	V	42.4	*	-42.8	14.7	10.1	-38.2	50.2	25.0
19350.0	H	46.2	*	-38.3	15.4	10.4	-33.3	45.3	25.0
19350.0	V	46.8	*	-38.3	15.4	10.4	-33.3	45.3	25.0

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : Dualband Wireless Amp
MODEL NUMBER : 8811960A
TEST MODE : Transmit @ 1955.0 MHz
NOTES : Test distance is 3 meters.
NOTES : ERP Total = Matched Sig. Gen. level + Antenna gain – cable loss

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	Matched SIG. GEN. (dB)	Equivalent Ant Gain (dB)	CBL (dB)	ERP Total (dBm)	Attenuation	Minimum Attenuation
3910.0	H	40.6	*	-67.2	12.7	3.9	-58.4	70.4	25.0
3910.0	V	40.2	*	-58.2	12.7	3.9	-49.4	61.4	25.0
5865.0	H	39.0	*	-65.6	13.3	4.9	-57.2	69.2	25.0
5865.0	V	39.1	*	-62.0	13.3	4.9	-53.6	65.6	25.0
7820.0	H	39.3	*	-62.0	13.7	5.7	-54.0	66.0	25.0
7820.0	V	40.0	*	-60.8	13.7	5.7	-52.8	64.8	25.0
9775.0	H	39.9	*	-60.8	15.0	6.4	-52.2	64.2	25.0
9775.0	V	40.2	*	-63.1	15.0	6.4	-54.5	66.5	25.0
11730.0	H	42.8	*	-63.1	13.9	7.1	-56.3	68.3	25.0
11730.0	V	43.1	*	-59.9	13.9	7.1	-53.1	65.1	25.0
13685.0	H	42.4	*	-59.9	14.9	7.8	-52.8	64.8	25.0
13685.0	V	42.0	*	-59.9	14.9	7.8	-52.8	64.8	25.0
15640.0	H	42.1	*	-48.2	15.2	8.9	-41.9	53.9	25.0
15640.0	V	42.1	*	-48.2	15.2	8.9	-41.9	53.9	25.0
17595.0	H	43.2	*	-42.5	14.8	10.1	-37.8	49.8	25.0
17595.0	V	42.6	*	-42.5	14.8	10.1	-37.8	49.8	25.0
19550.0	H	46.4	*	-38.0	15.5	10.4	-32.9	44.9	25.0
19550.0	V	46.4	*	-38.0	15.5	10.4	-32.9	44.9	25.0

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : 3XA Wireless Inc.
TEST ITEM : Dualband Wireless Amp
MODEL NUMBER : 8811960A
TEST MODE : Transmit @ 1985.0 MHz
NOTES : Test distance is 3 meters.
NOTES : ERP Total = Matched Sig. Gen. level + Antenna gain – cable loss

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	Matched SIG. GEN. (dB)	Equivalent Ant Gain (dB)	CBL (dB)	ERP Total (dBm)	Attenuation	Minimum Attenuation
3970.0	H	37.7	*	-66.8	12.9	3.9	-57.8	69.8	25.0
3970.0	V	38.9	*	-57.8	12.9	3.9	-48.8	60.8	25.0
5955.0	H	39.2	*	-65.2	13.4	4.9	-56.7	68.7	25.0
5955.0	V	40.6	*	-61.6	13.4	4.9	-53.1	65.1	25.0
7940.0	H	38.6	*	-61.6	13.9	5.7	-53.4	65.4	25.0
7940.0	V	38.8	*	-60.4	13.9	5.7	-52.2	64.2	25.0
9925.0	H	39.2	*	-60.4	15.1	6.4	-51.7	63.7	25.0
9925.0	V	39.1	*	-62.7	15.1	6.4	-54.0	66.0	25.0
11910.0	H	42.3	*	-62.7	14.0	7.1	-55.8	67.8	25.0
11910.0	V	42.2	*	-59.5	14.0	7.1	-52.6	64.6	25.0
13895.0	H	42.2	*	-59.5	15.0	7.8	-52.3	64.3	25.0
13895.0	V	42.1	*	-59.5	15.0	7.8	-52.3	64.3	25.0
15880.0	H	41.9	*	-47.8	15.3	8.9	-41.4	53.4	25.0
15880.0	V	41.7	*	-47.8	15.3	8.9	-41.4	53.4	25.0
17865.0	H	41.9	*	-42.1	15.0	10.1	-37.2	49.2	25.0
17865.0	V	42.0	*	-42.1	15.0	10.1	-37.2	49.2	25.0
19850.0	H	47.2	*	-37.6	15.7	10.4	-32.3	44.3	25.0
19850.0	V	46.8	*	-37.6	15.7	10.4	-32.3	44.3	25.0

Checked BY Richard E. King :

Richard E. King